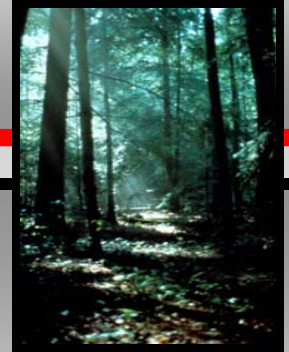


# **Forces Shaping the Future of Public Natural Lands in the United States**



- **Immigration**
- **Population Growth**
- **Economic Growth**
- **Footprints on the Land**

**Co-Authors:**

**Ken Cordell (FS)**

**John Bergstrom (UGA)**

**Carter Betz (FS)**

**Gary Green (UGA)**

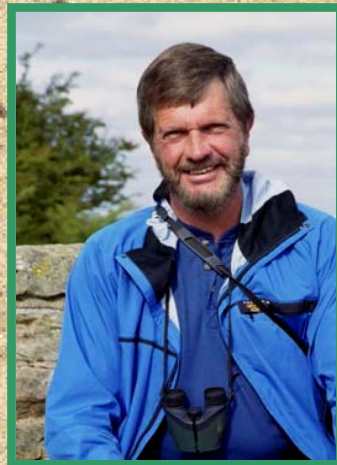
# Footprints on the Land:

**An Assessment of  
Demographic Trends  
and the Future of  
Natural Resources  
in the United States**

\*\*\*\*\*

\*\*\*\*\*

**By  
H. Ken Cordell  
Christine Overdevest,  
Principal Authors**



**DEMOGRAPHIC DATA  
SOURCE**

This published book examined the population, demographic, urban, rural, economic, leisure and recreation trends of the United States. An update is underway.

# Socioeconomic Forces Shaping the Future of the United States: An Update of Footprints

By

H. Ken Cordell , John C. Bergstrom , Carter J. Betz , and Mary T. Green<sup>2</sup>

## *Introduction*

This chapter is devoted to providing up-to-date summaries of a number of highly important social and economic trends that will play a role in the future of the United States and its natural resources. The trends topics covered include population growth, changing composition of the population, urban growth and sprawl, transition of rural lands, economic growth, consumer spending, and recreation demands. This chapter is essentially an abbreviated update of the book *Footprints on the Land* (Cordell & Overdevest, 2001). It is undertaken .....

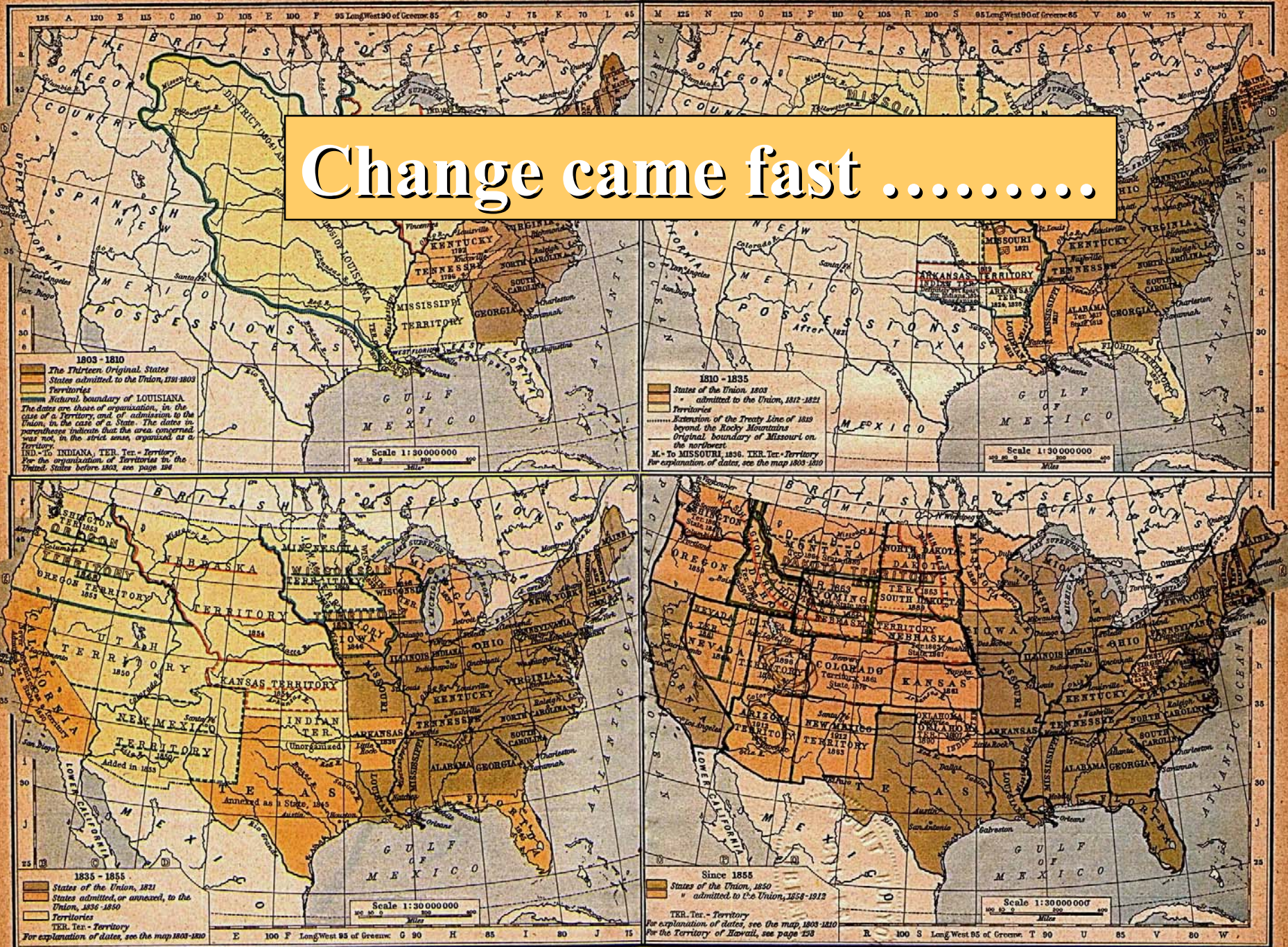
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<sup>1</sup>Project Leader and Outdoor Recreation Planner respectively, USDA Forest Service, Southern Research Station, Athens, GA.

<sup>2</sup>Respectively, Professor, Agriculture & Applied Economics, and Assistant Research Scientist, Warnell School of Forest Resources, University of Georgia, Athens, GA.



# Change came fast .....



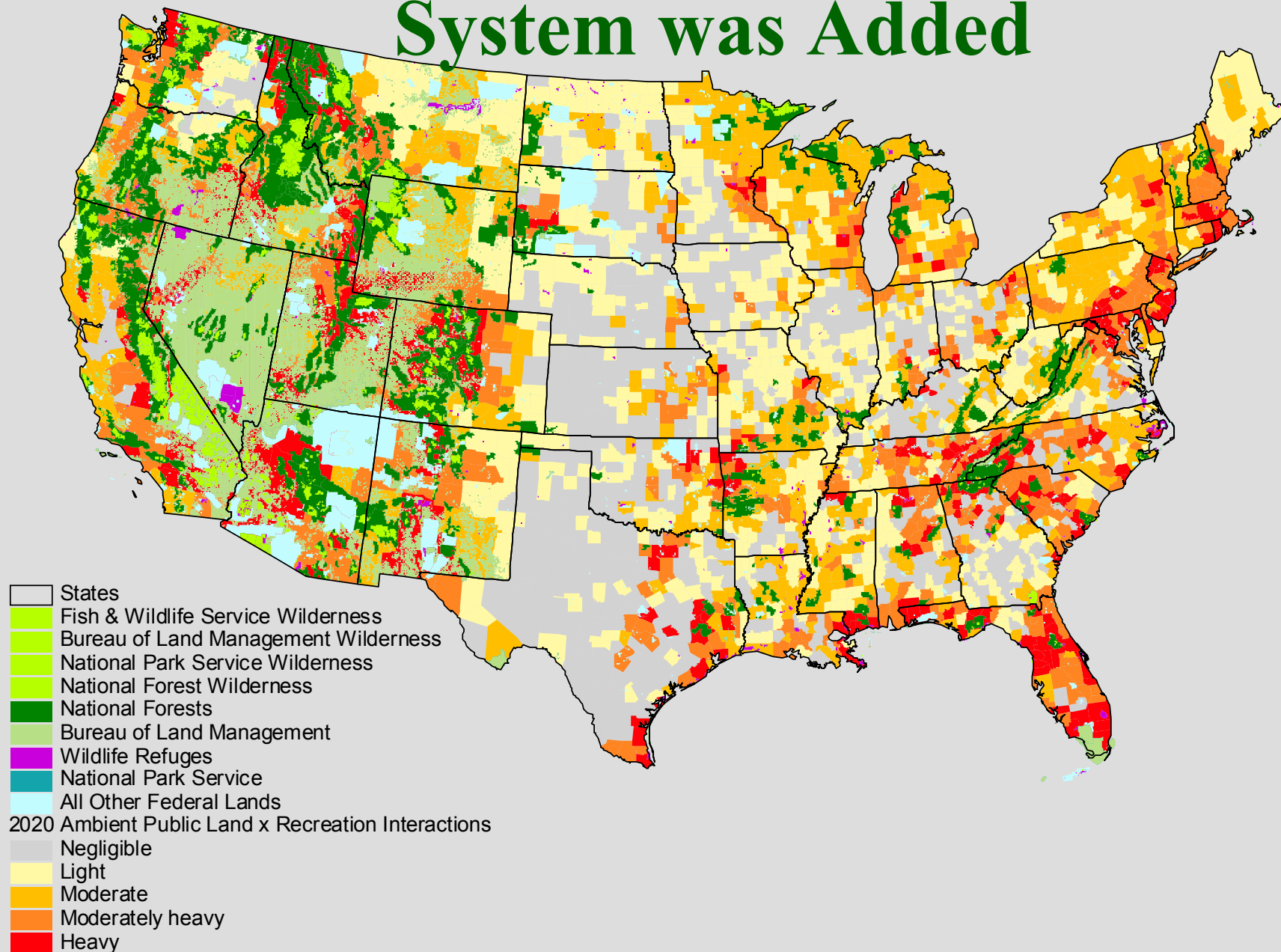


# United States



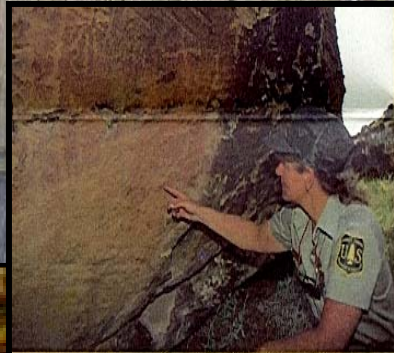
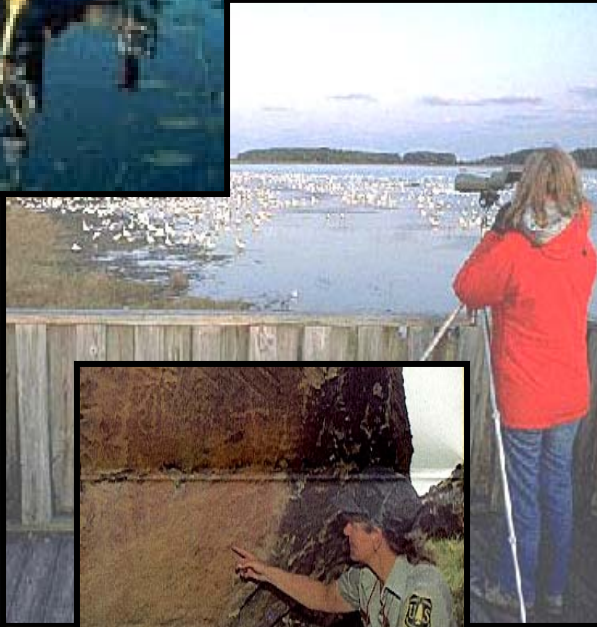


# A Rich Public Natural Land System was Added





# Natural Settings for Fun







# **Forests, Rivers and Minerals for Raw Materials**

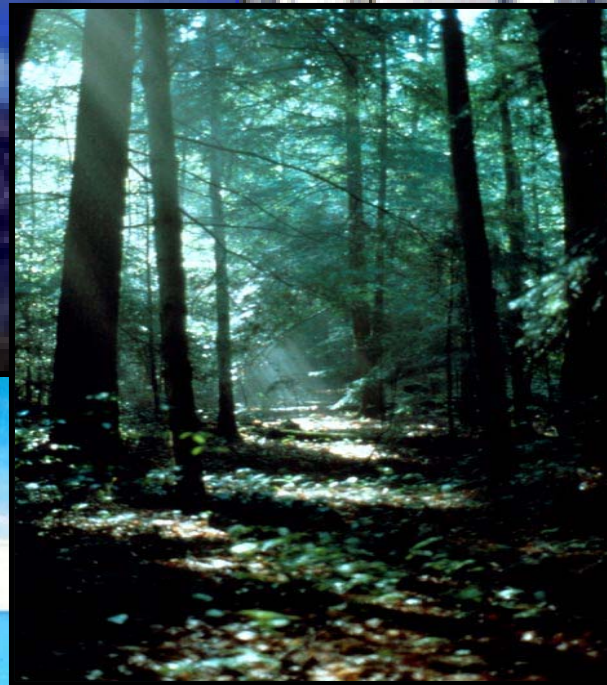
Source: Arthur Carhart National Wilderness Training Center

# A Management Challenge for a Sustainable Future



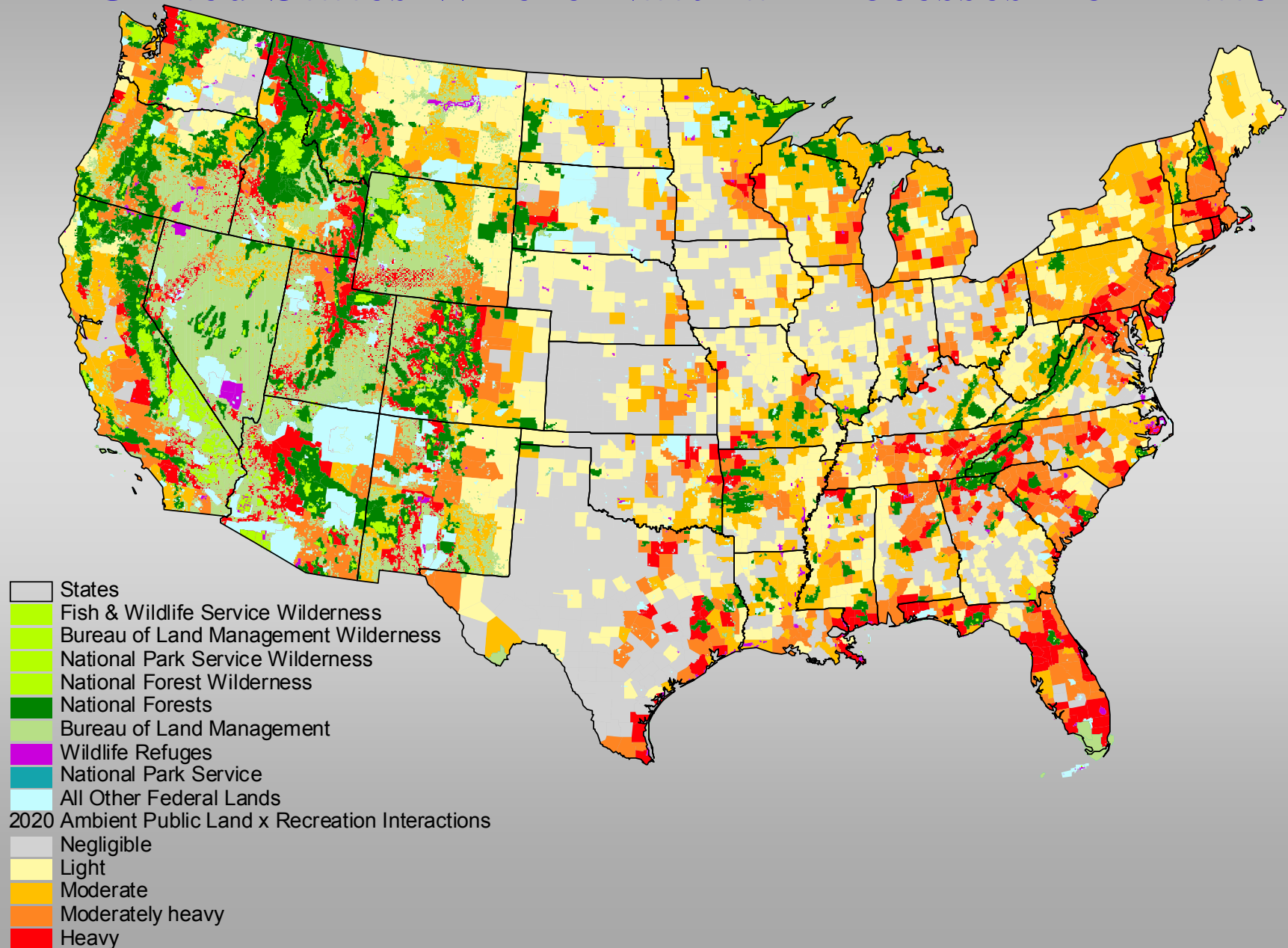


# Irreplaceable Wild Lands Under Protection



Source: Arthur Carhart National Wilderness Training Center

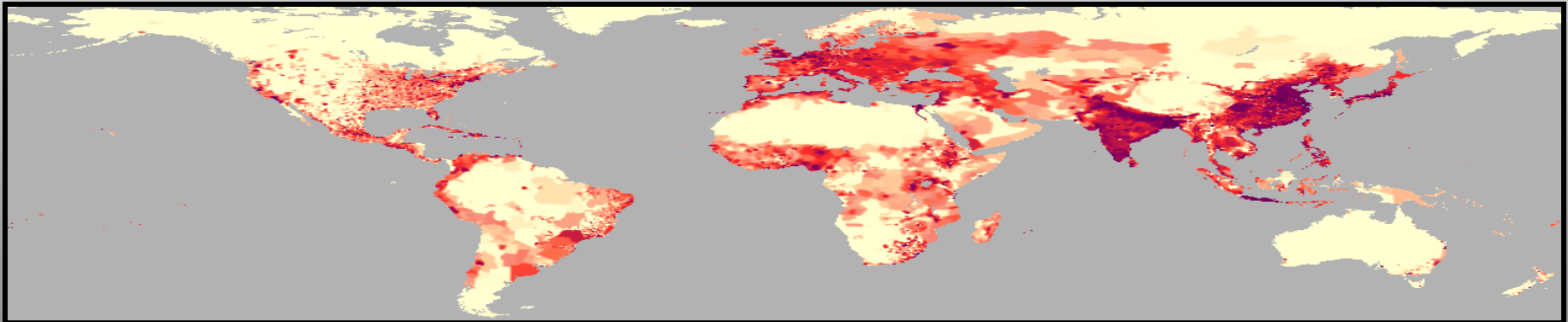
# A System of Public Lands and Wilderness Across the United States Where Natural Processes Dominate

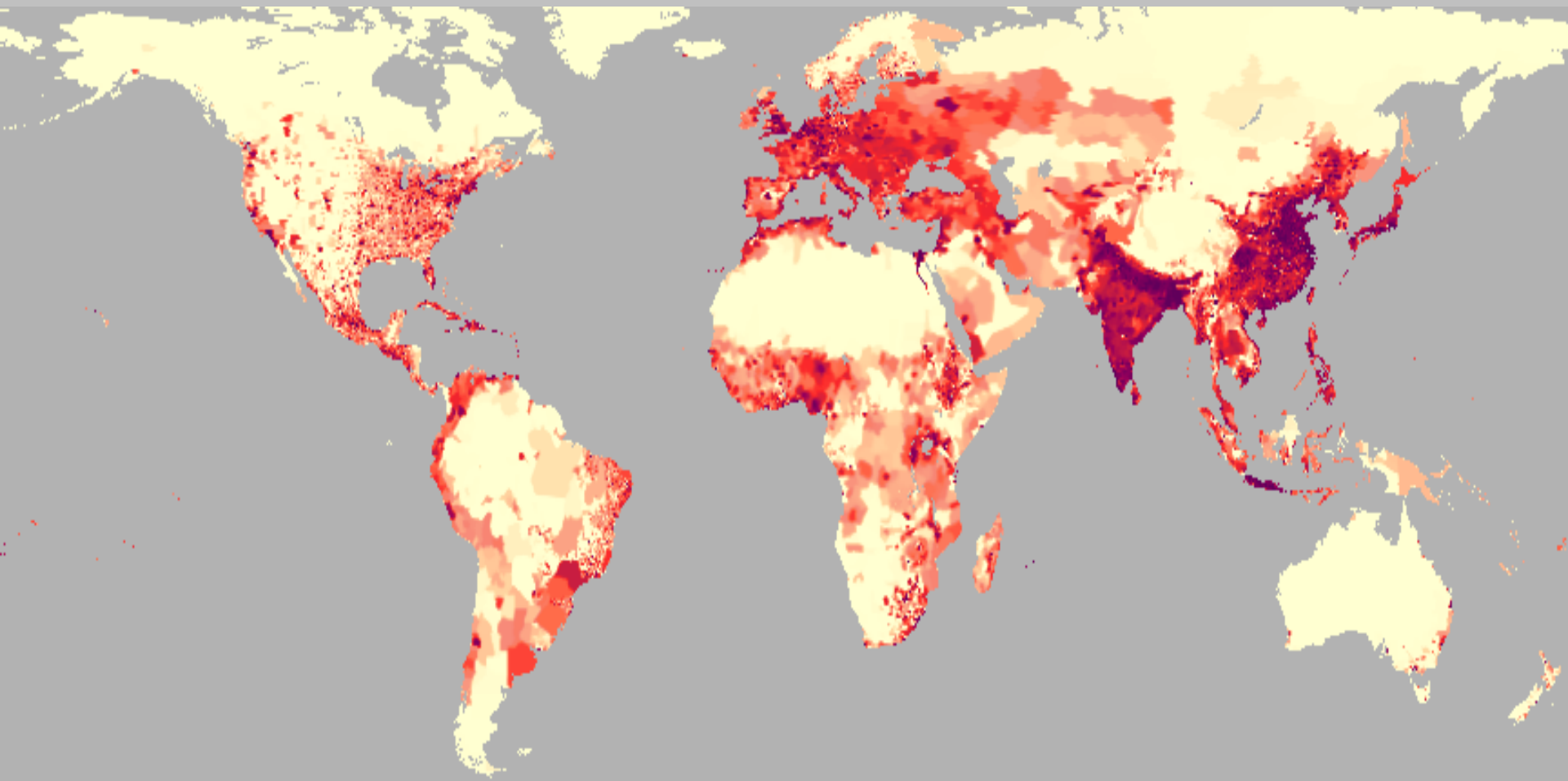




# **PUBLIC LANDS IN A RAPIDLY CHANGING SOCIAL LANDSCAPE**

**IMMIGRATION: A Growing  
World Population on the Move**





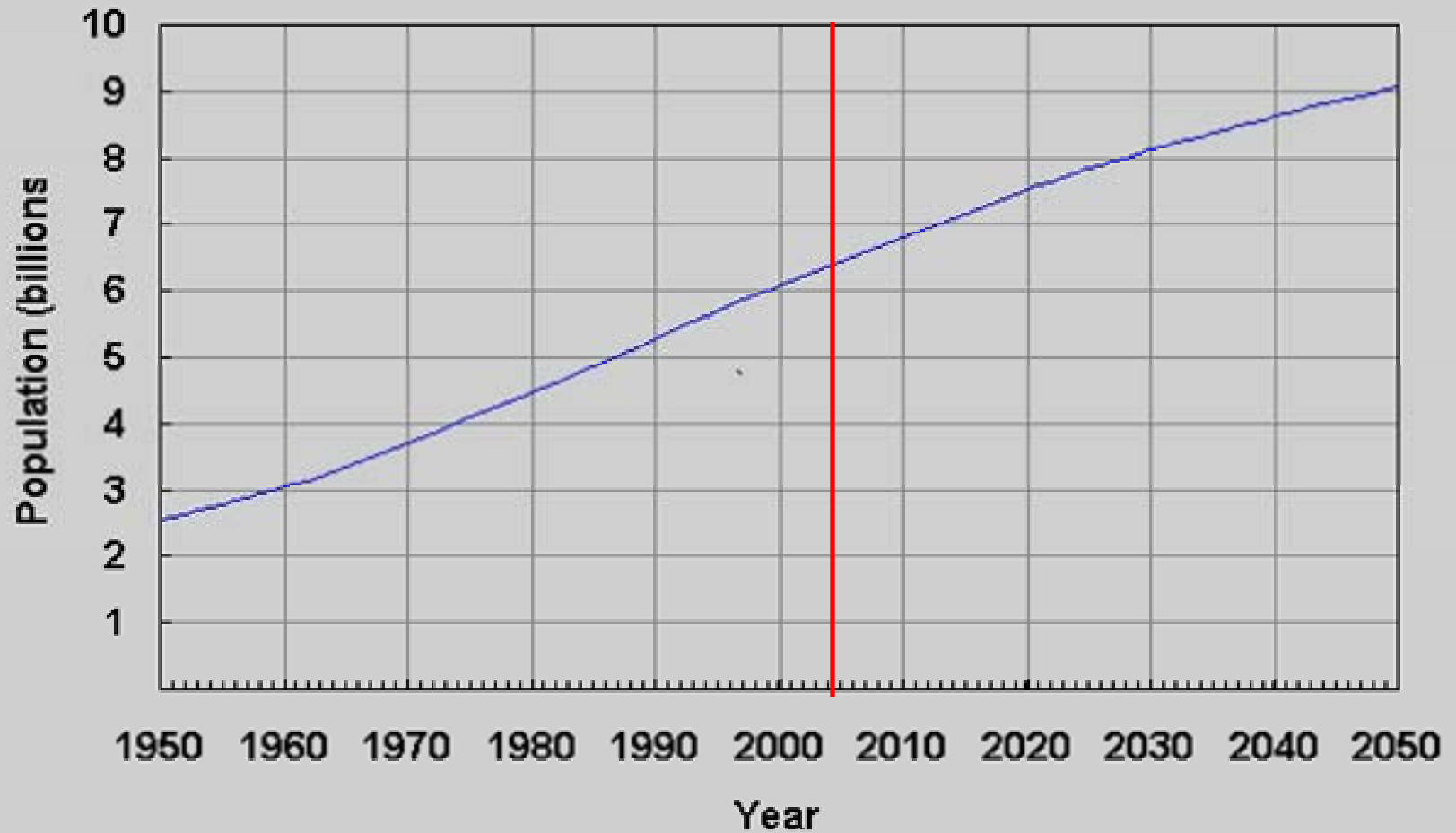
**Population densities (per square km).**



<http://sedac.ciesin.columbia.edu/gpw/>



## World Population: 1950-2050



Source: U.S. Census Bureau, International Data Base, April 2004 version.

# **MILLIONS OF IMMIGRANTS LIVING** **IN THE U.S. BY YEAR OF ENTRY**

<b>1990 to 2000</b>	<b>1980-1989</b>	<b>1970-1979</b>	<b>Before 1970</b>
---------------------	------------------	------------------	--------------------

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<b>5.070</b>	<b>3.541</b>	<b>2.393</b>	<b>2.408</b>
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**Source: United States Bureau of Census**



## ***Immigration-- April 1, 2000 to July 1, 2003***

		<u>Top 10 States</u> (1000's)	
Births	13.1 million	Arizona	111.5
Deaths	7.9 million	California	937.8
Immigration	4.2 million	Florida	349.3
		Georgia	127.0
		Illinois	217.6
		Mississippi	108.7
Net Increase	9.4	New Jersey	192.0
Percent Immigration	45%	New York	442.8
≈ 110,000/month		North Carolina	102.9
		Texas	439.8

**Source: U. S. Census**

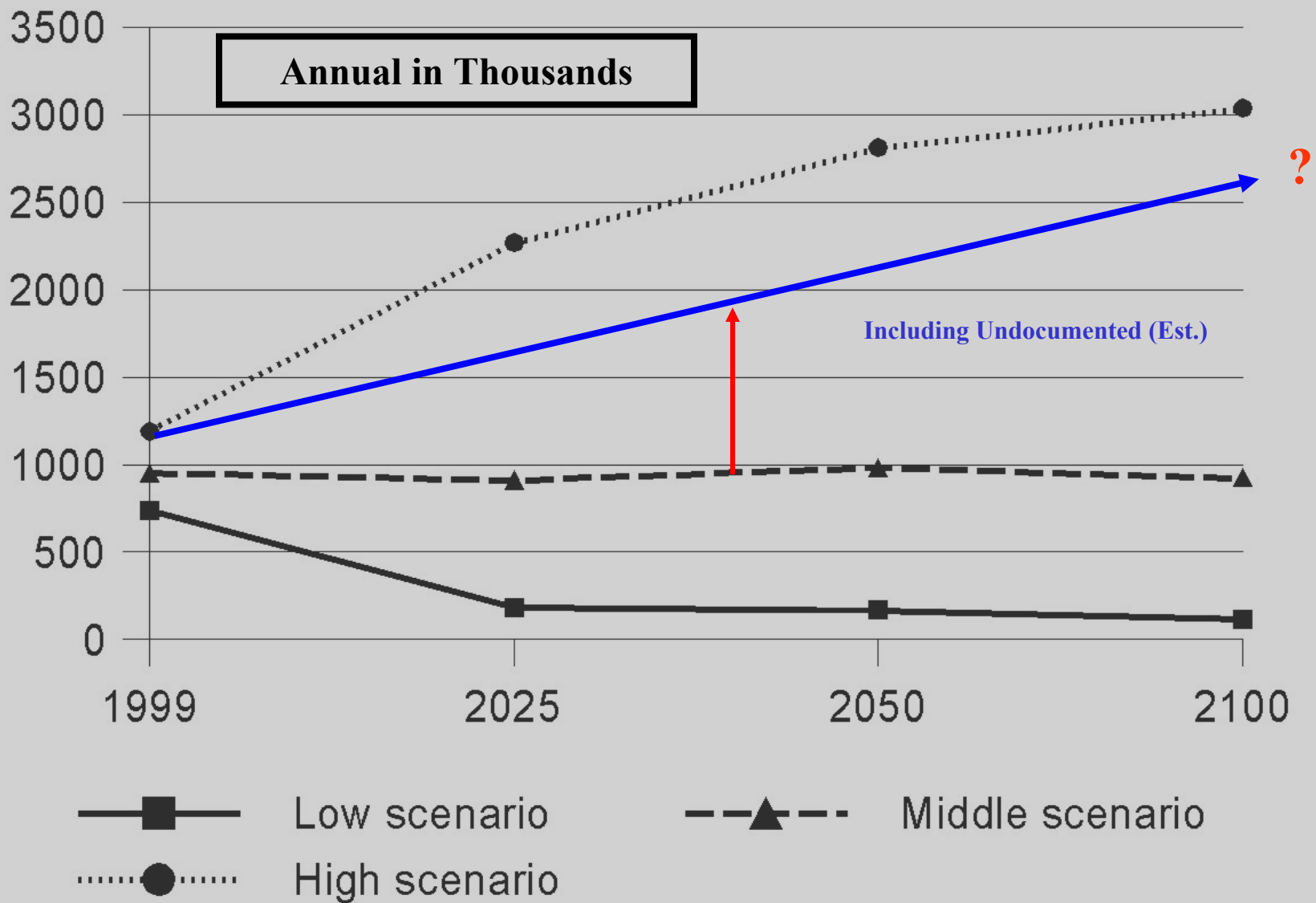
## ***Millions of Immigrants by Household Size and Origin (March 2002)***

<b>Household Size</b>	<b><u>Europe</u></b>	<b><u>Asia</u></b>	<b><u>Latin America</u></b>	<b><u>Other</u></b>	<b><u>Total</u></b>
<b>1-2</b>	<b>1.5</b>	<b>1.5</b>	<b>2.0</b>	<b>0.6</b>	<b>5.7</b>
<b>3-5</b>	<b>0.8</b>	<b>1.7</b>	<b>3.6</b>	<b>0.5</b>	<b>6.5</b>
<b>6+</b>	<b>0.1</b>	<b>0.2</b>	<b>0.8</b>	<b>0.1</b>	<b>1.2</b>
<b>All</b>	<b>2.4</b>	<b>3.4</b>	<b>6.4</b>	<b>1.2</b>	<b>13.4</b>
<b>Percent</b>	<b>18</b>	<b>25</b>	<b>48</b>	<b>9</b>	<b>100</b>

***Majority from Mexico***

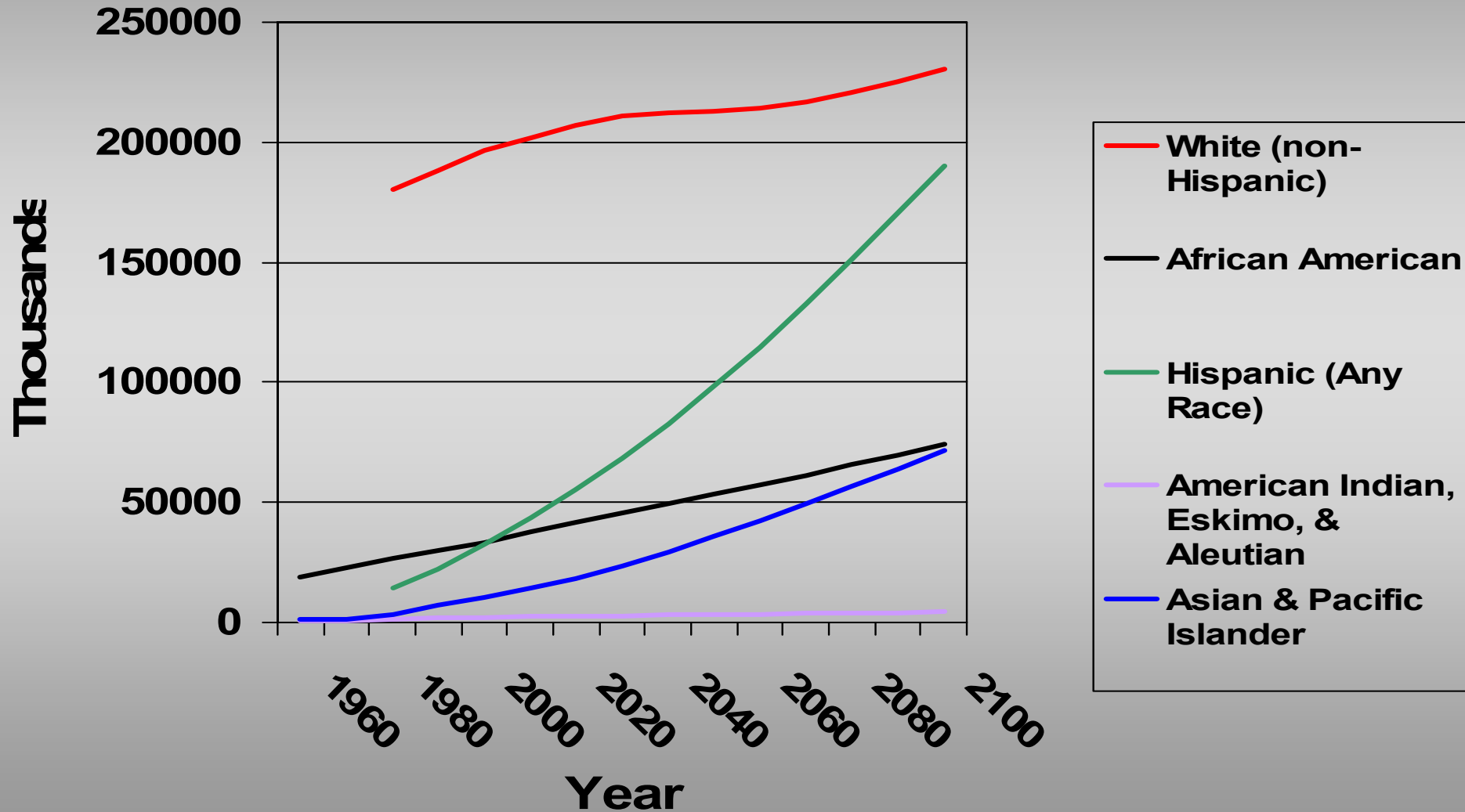
**Source: U. S. Census**





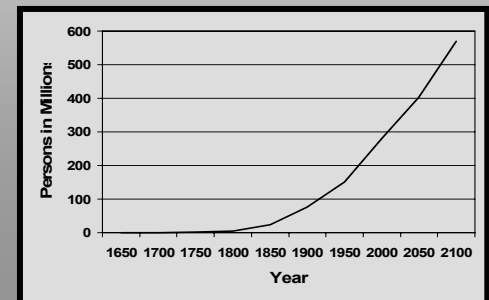
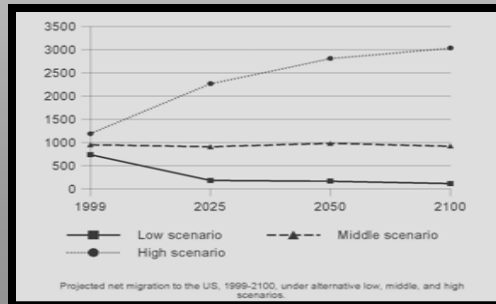
Projected net migration to the US, 1999-2100, under alternative low, middle, and high scenarios.

# Historic and Projected U. S. Population by Ethnicity



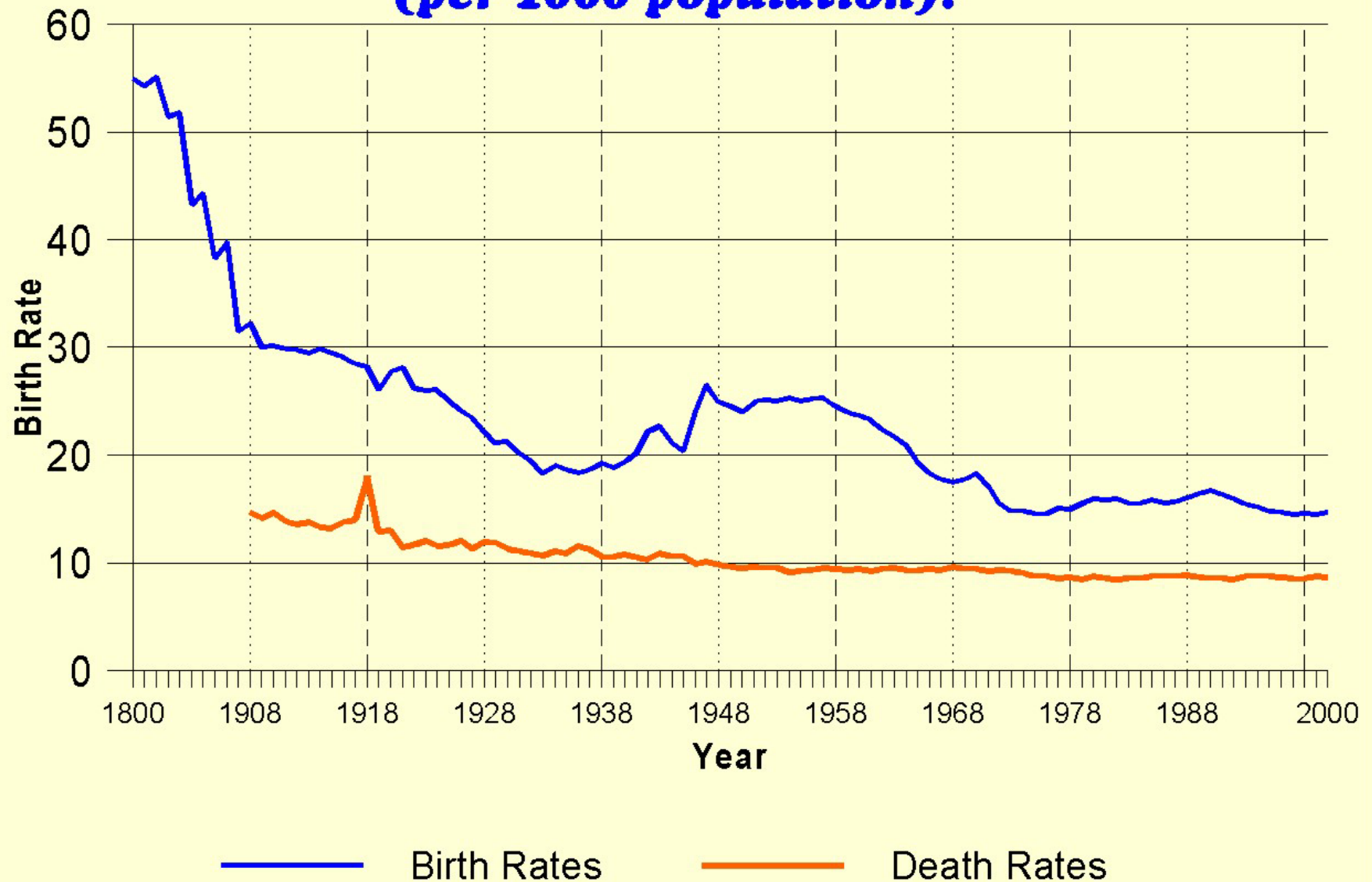
# PUBLIC LANDS IN A RAPIDLY CHANGING SOCIAL LANDSCAPE

## U. S. Population Growth: Immigration plus Natural Growth

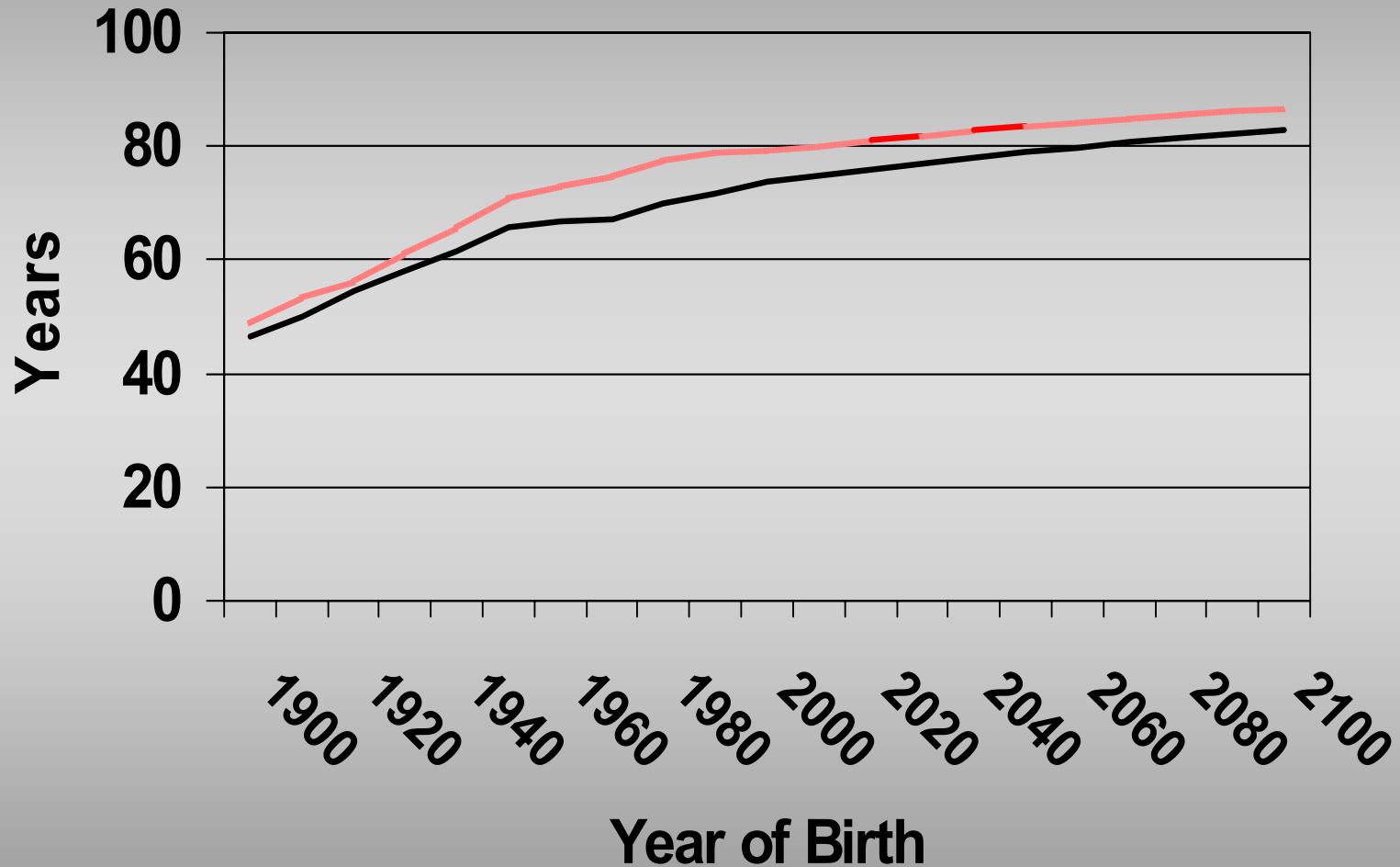




**U.S. Birth Rates: 1800-2000 &  
U.S. Death Rates: 1908-2000  
(per 1000 population).**



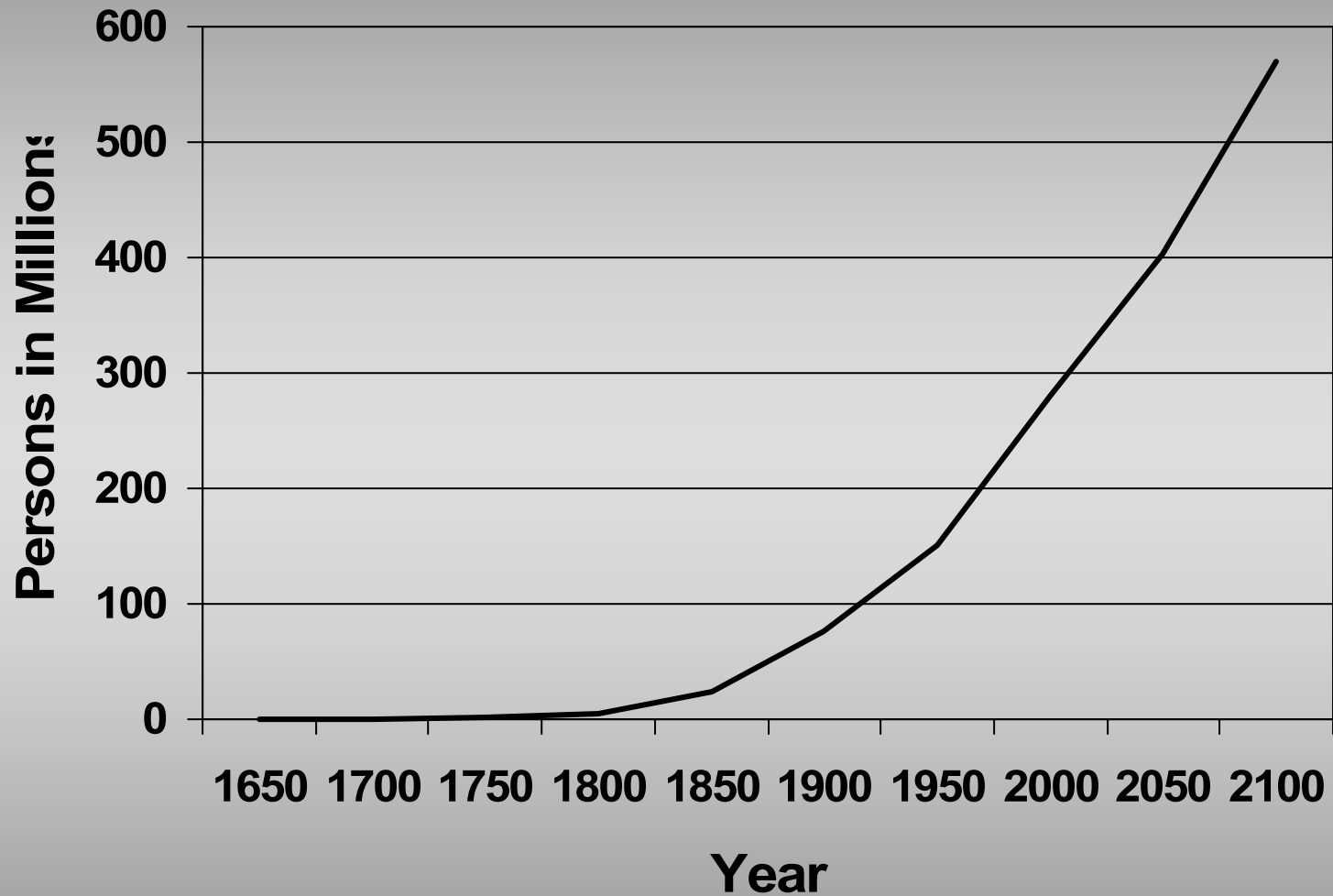
# Life Expectancy



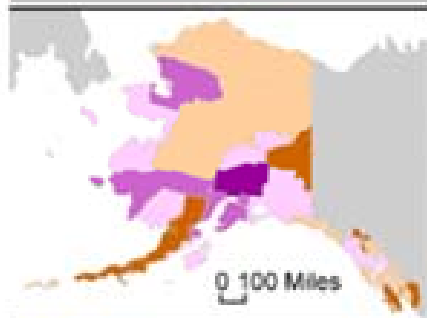
Source: Social Security  
Administration

— Male — Female

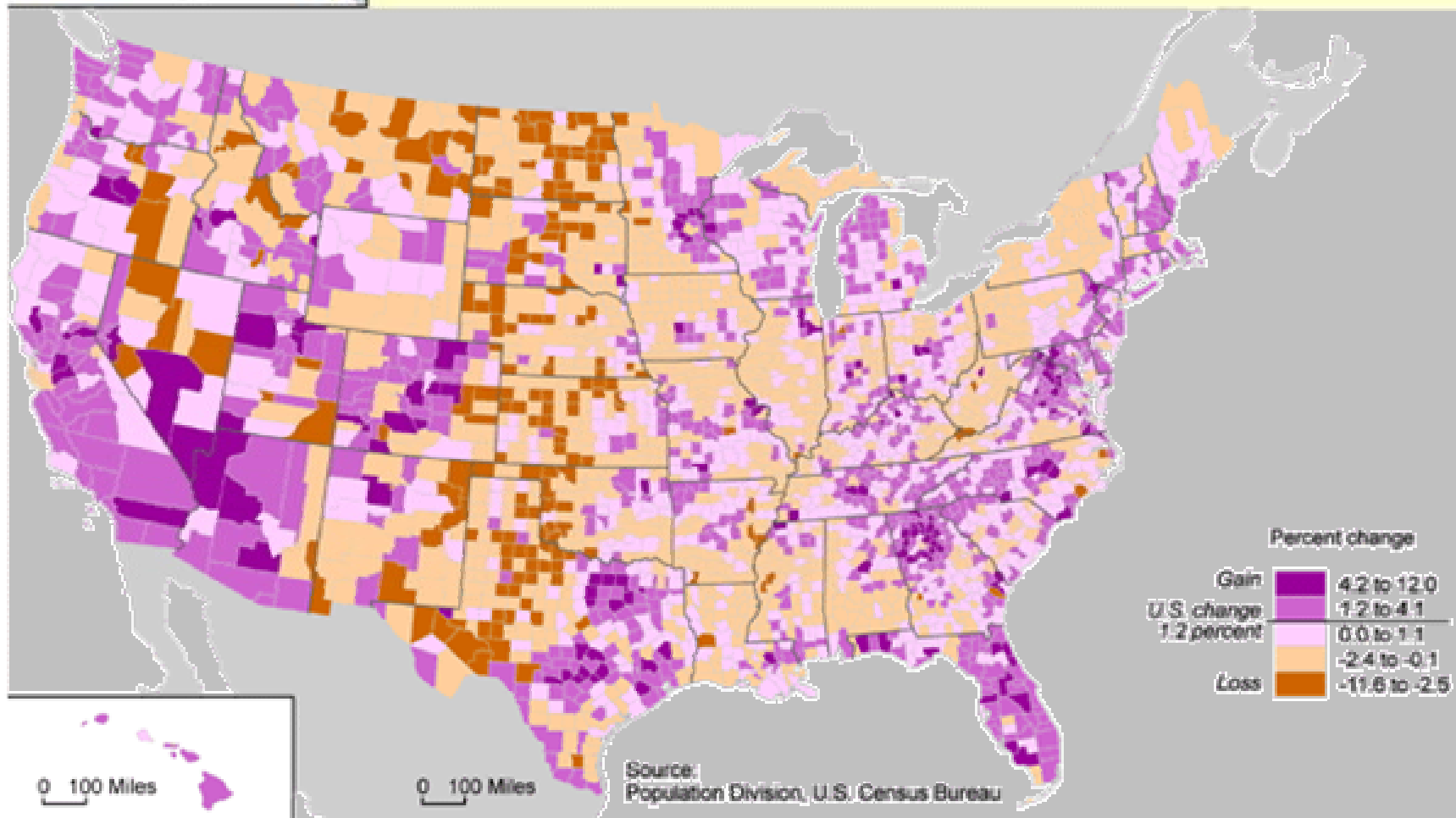
# Historical and Projected Population in the U.S.





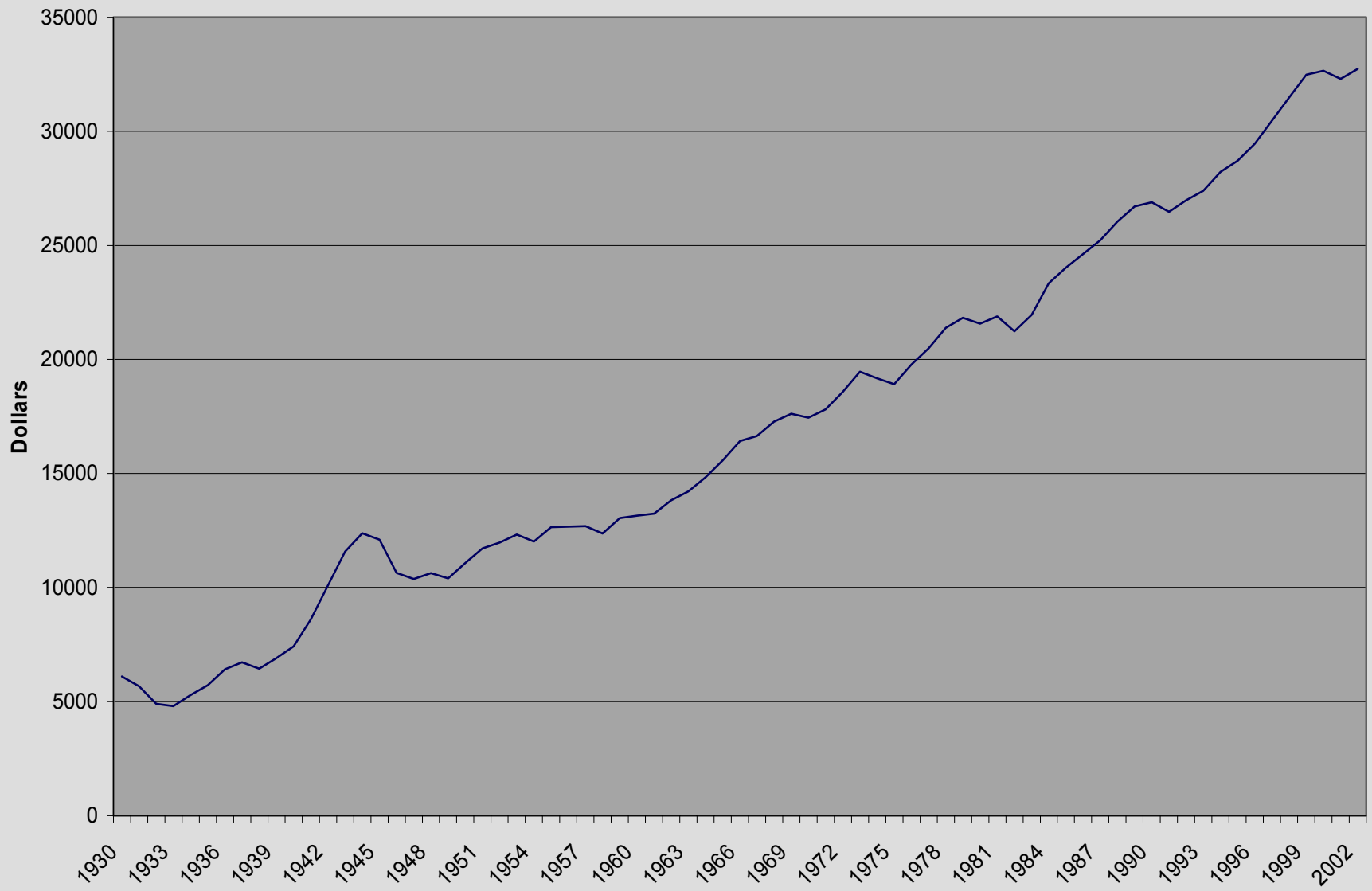


# Percent Change in Population by County April 1, 2000 to July 1, 2001



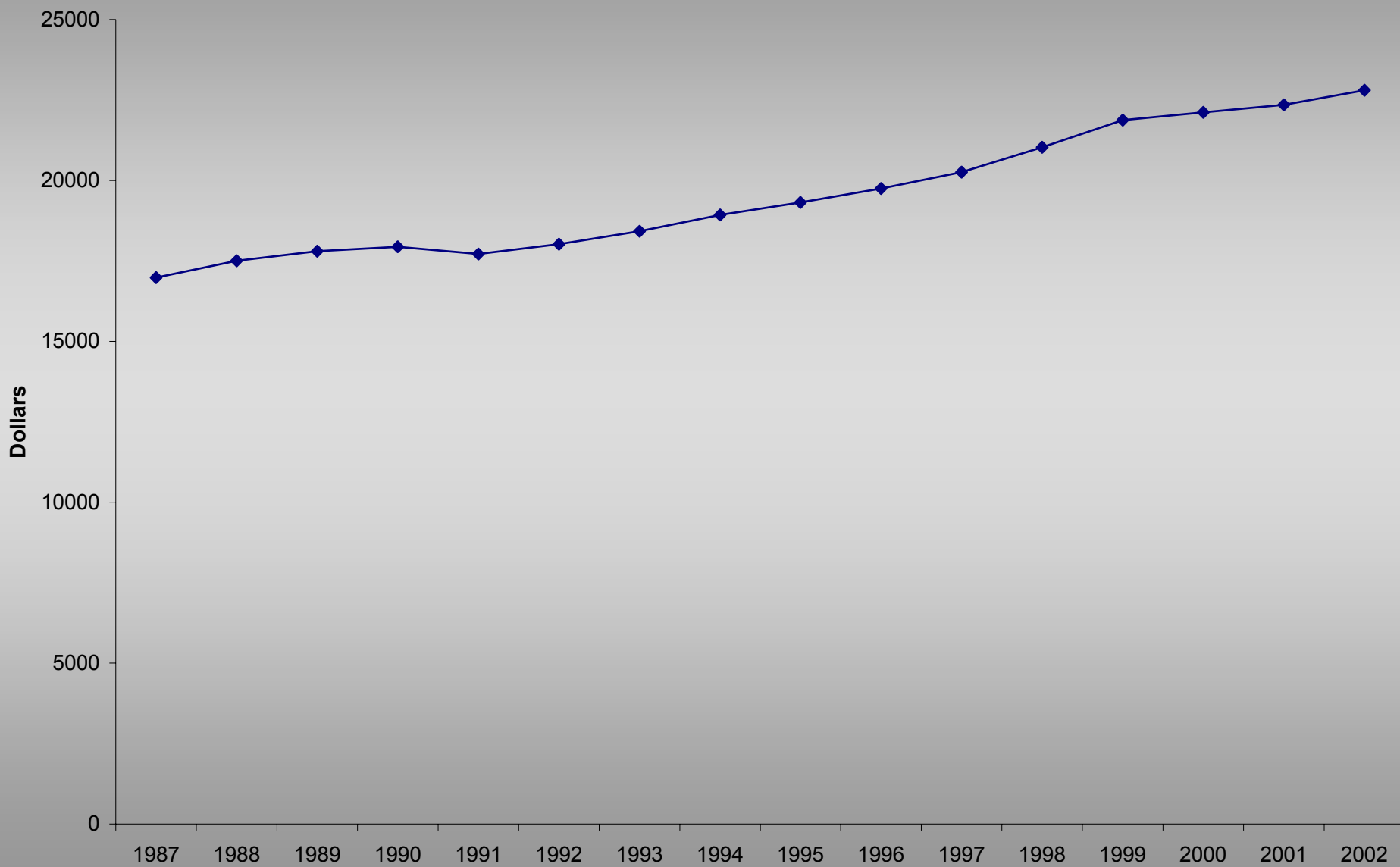
**GROWTH = Population  
Plus Economic  
Expansion**

**Figure 3. Real GDP Per Capita Over Time**

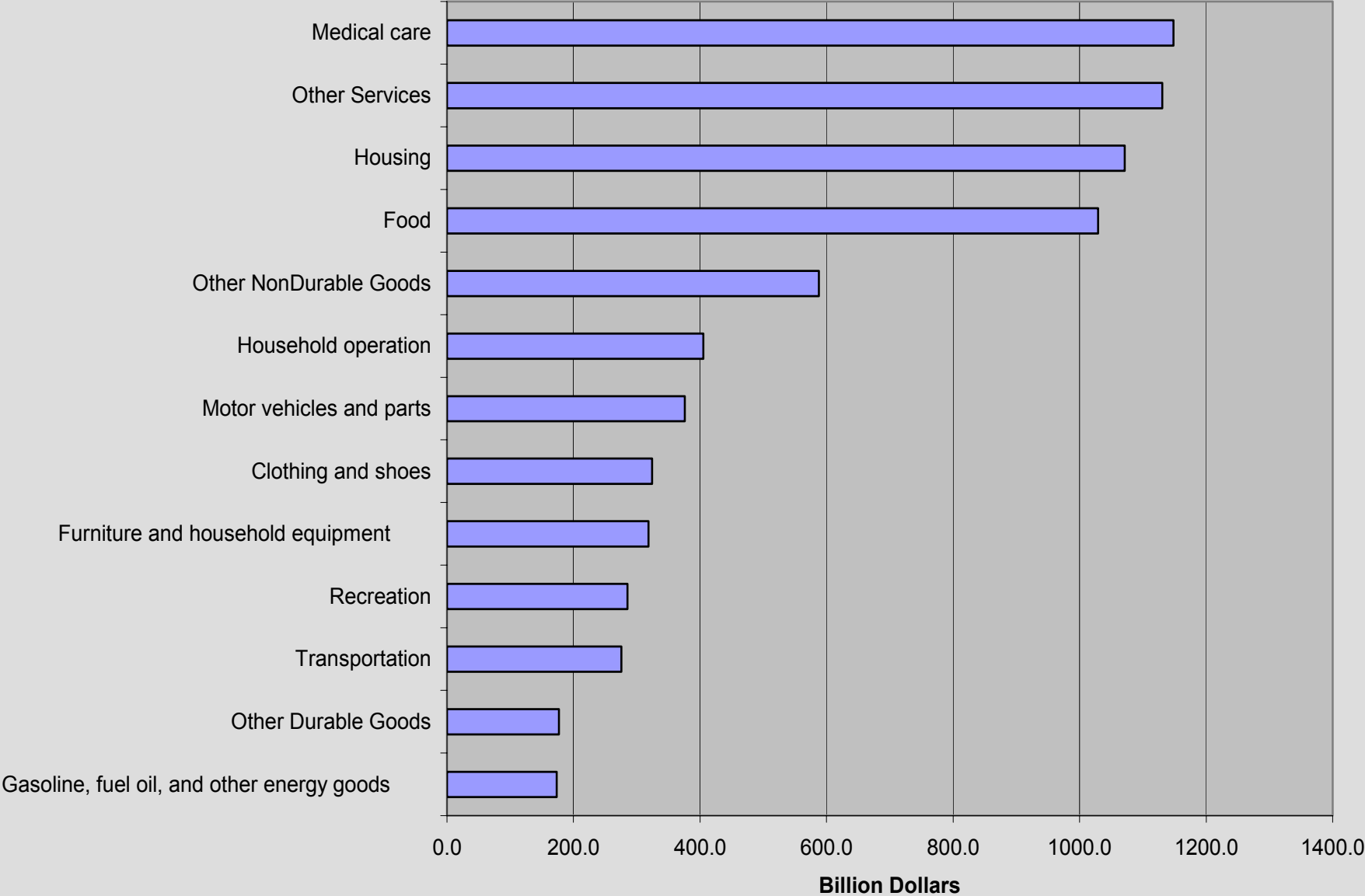




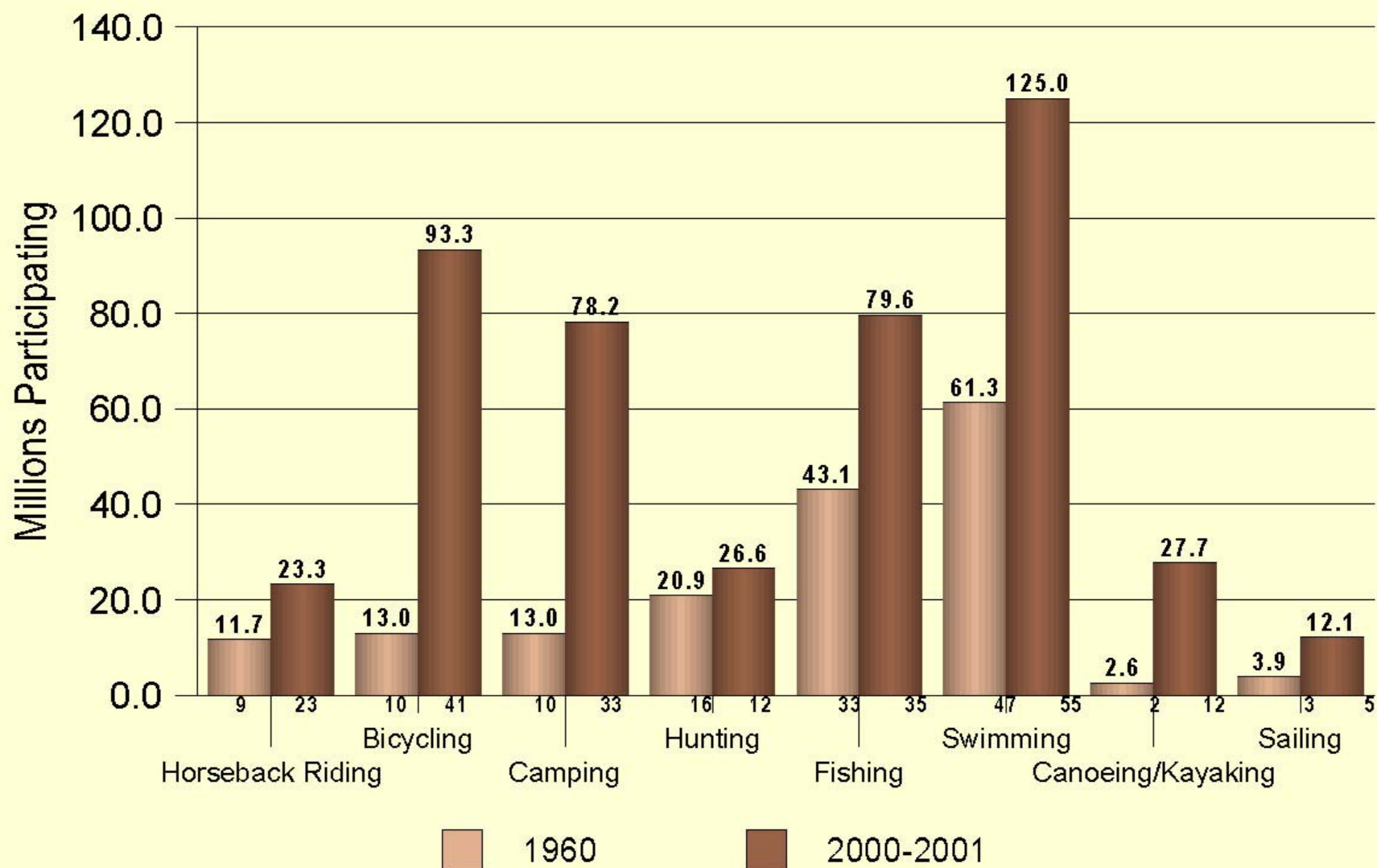
**Figure 6. Real Per Capita Personal Consumption Expenditures Over Time**



**Figure 9. Personal Consumption Expenditures, Detailed Components: 2002 Current Dollars**



# ***Popularity of selected activities in 1960 and 2000-2001***





# Recreation Activity Growth in order of Added Number

## GREATEST GROWTH

**Walk for pleasure #1**  
**Family gathering**  
**View wildlife**  
**Visit nature centers**  
**Bicycling**  
**View/photograph fish**  
**Day hiking**  
**Running or jogging**  
**Picnicking**  
**Attend outdoor  
concerts, etc.**  
**View birds**  
**Developed camping**  
**Swimming in natural  
waters**  
**Attend outdoor sports  
events**  
**Visit historic sites**

## Participating

### MODERATE

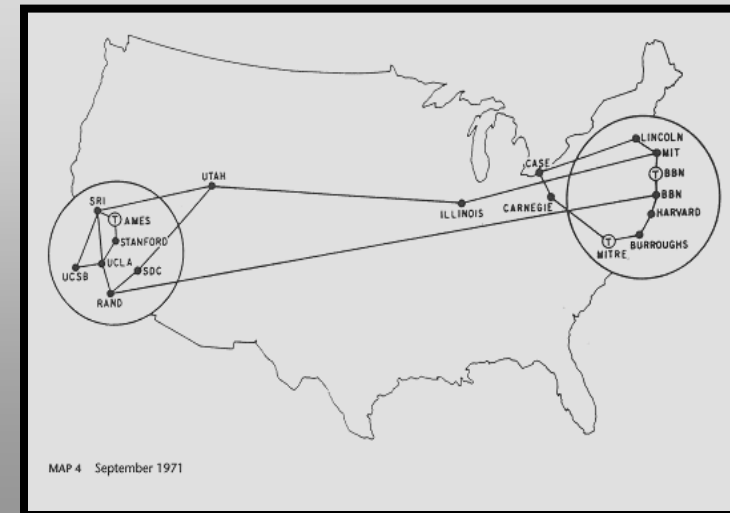
**Sledding**  
**Jet skiing**  
**Visit arch. sites**  
**Drive off-road**  
**Coldwater fishing**  
**Warmwater fishing**  
**Soccer outdoors**  
**Backpacking**  
**Visit beach or  
waterside**  
**Horseback riding**  
**Canoeing**  
**Primitive camping**  
**Motorboating**  
**Snowboarding**  
**Whitewater Rafting**

## LEAST GROWTH

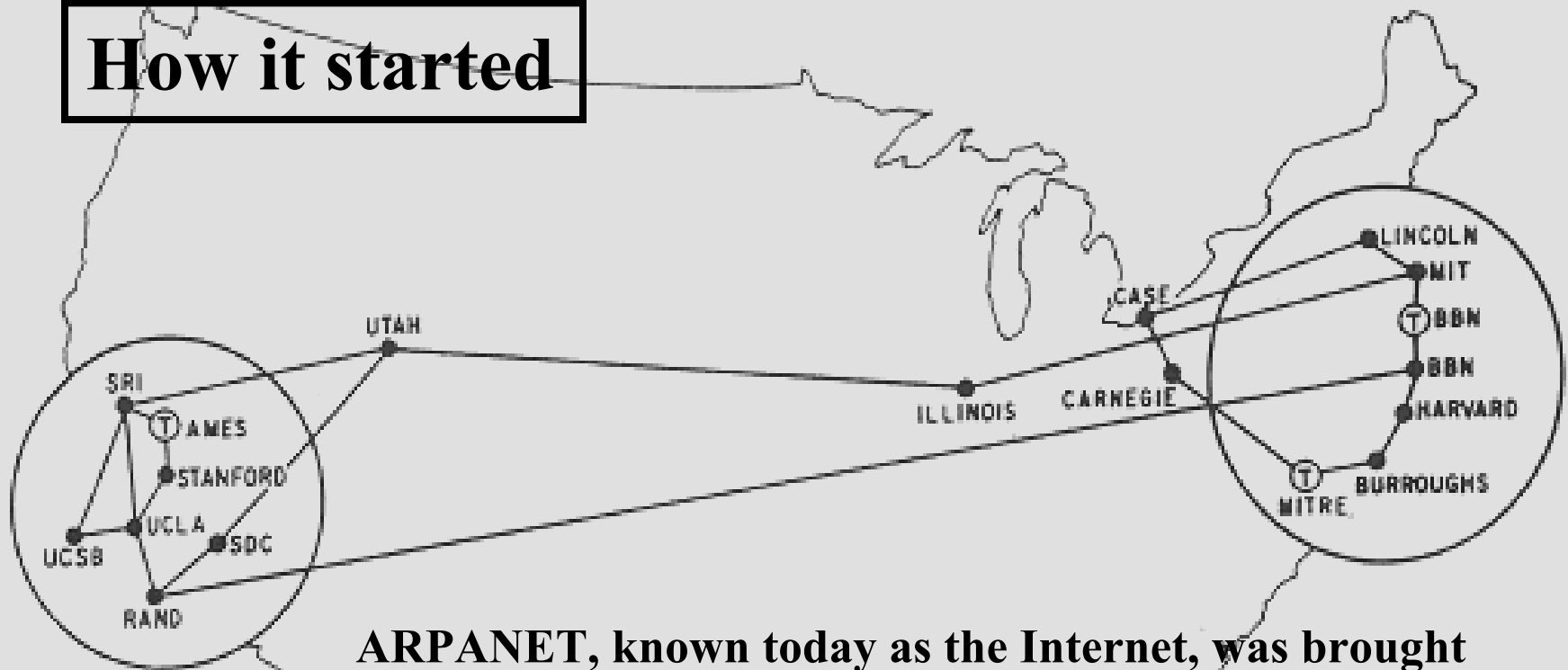
**Snowmobiling**  
**Kayaking**  
**Ice skating outdoors**  
**Mountain climbing**  
**Big game hunting**  
**Saltwater fishing**  
**Small game hunting**  
**Rock climbing**  
**Downhill skiing**  
**Cross country skiing**  
**Sailing**  
**Snorkeling or scuba  
diving**  
**Rowing**  
**Migratory bird hunting**  
**Surfing**  
**Pool swimming**  
**Anadromous fishing**  
**Caving**

# Growth and the Internet

## Connection with the World



# How it started



**ARPANET, known today as the Internet, was brought online in December 1969, when it initially connected four major computers at universities in the southwestern US (UCLA, Stanford Research Institute, UCSB, and the University of Utah). By January 1971, MIT, Harvard, BBN, Systems Development Corp, Stanford, MIT's Lincoln Labs, Carnegie-Mellon, and Case-Western Reserve University were added.**

# **GROWTH OF INTERNET USERS WORLD WIDE**

• Dec. 1995	16 Million
• Dec. 1997	70 Million
• Dec. 1999	248 Million
• Dec. 2000	451 Million
• Dec. 2003	719 Million
• April 2004	757 Million



World Regions	Population ( 2004 Est.)	Internet Usage, ( Year 2000 )	Internet Usage, Latest Data	User Growth ( 2000- 2004 )	% Pop.	% of Table
<a href="#">Africa</a>	905,954,600	4,514,400	10,095,200	123.6 %	1.1 %	1.3 %
<a href="#">Asia</a>	3,654,644,200	114,303,000	236,591,317	107.0 %	6.5 %	31.2 %
<a href="#">Europe</a>	728,857,380	100,993,093	204,802,658	102.8 %	28.1 %	27.1 %
<a href="#">Middle East</a>	259,166,000	5,272,300	14,472,500	174.5 %	5.6 %	1.9 %
<a href="#">North America</a>	326,695,500	108,096,800	226,409,994	109.5 %	69.3 %	29.9 %
<a href="#">Latin America/Caribbean</a>	546,100,900	18,068,919	49,504,287	174.0 %	9.1 %	6.5 %
<a href="#">Oceania</a>	31,892,487	7,619,500	15,654,781	105.5 %	49.1 %	2.1 %
<b>WORLD TOTAL</b>	6,453,311,067	358,871,012	757,530,737	111.1 %	11.7 %	100.0 %

[page](#)

**NOTES: (1) Internet Usage and Population Stats were updated on April 30, 2004.**

<u>NORTH AMERICA</u>	Population ( 2004 Est.)	Internet Users, Latest Data	Use Growth (2000- 2004)	% Population (Penetration)
<u>Bermuda</u>	65,000	30,000	20.0 %	46.2 %
<u>Canada</u>	32,026,600	16,841,811	32.6 %	52,6 %
<u>Greenland</u>	56,600	20,000	12.4 %	35.3 %
<u>United States</u>	294,540,100	209,518,183	108.8 %	71.1 %
<b>Total</b>	<b>326,695,500</b>	<b>215,988,656</b>	<b>99.8 %</b>	<b>66.1 %</b>

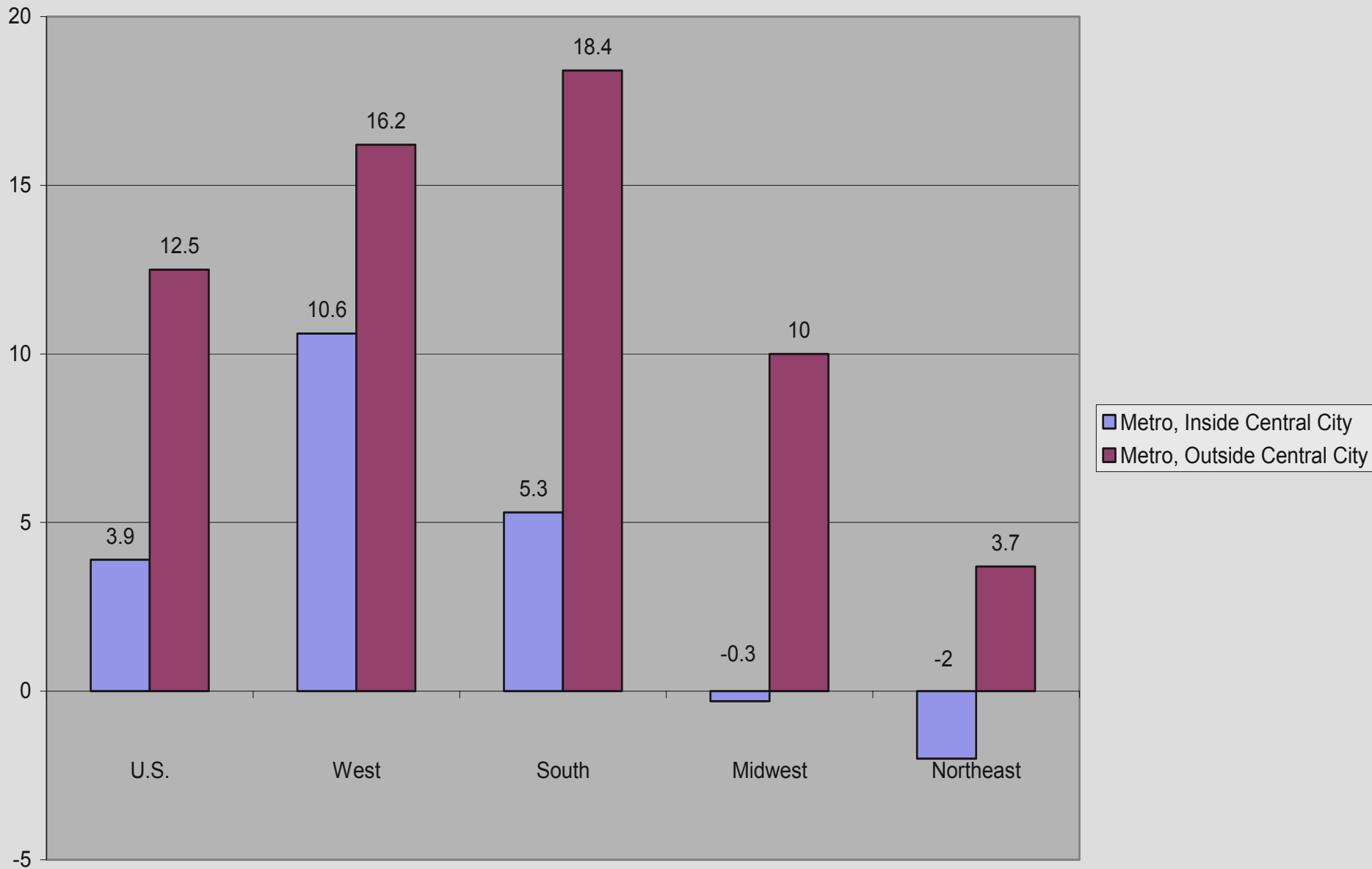
# **Footprints of Growth**

# Description of the Area Within ½ Mile of Where People Live

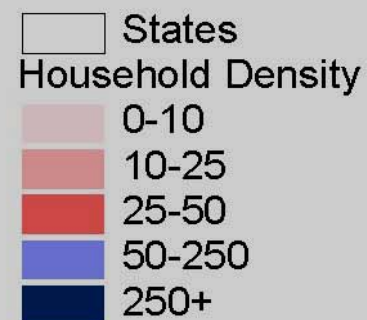
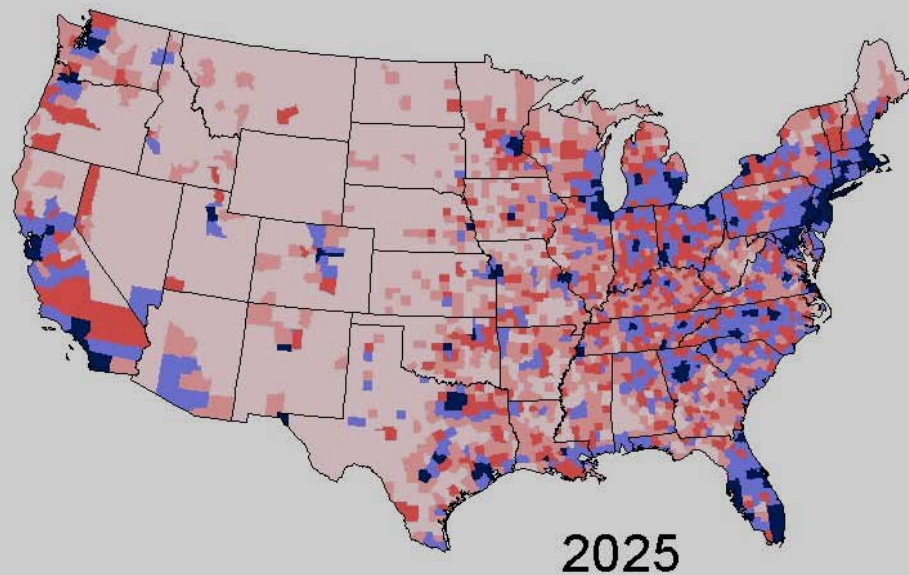
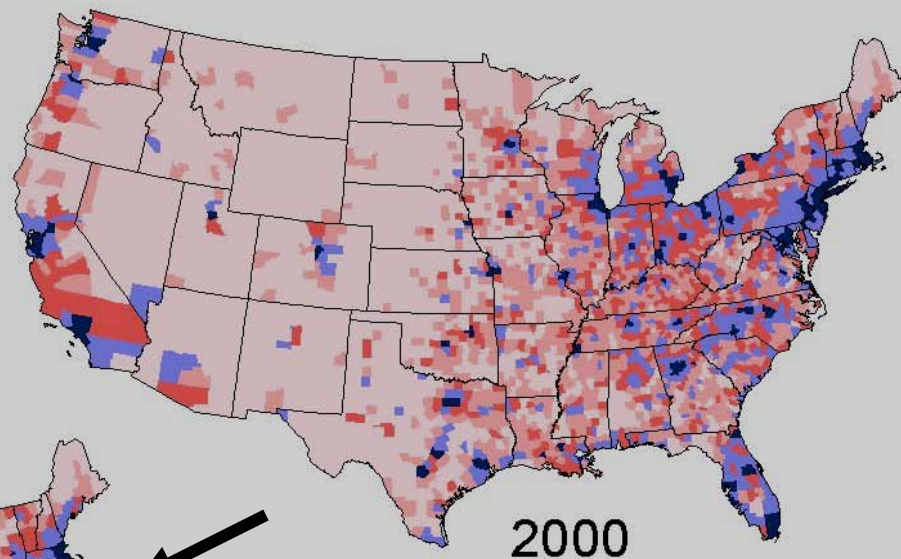
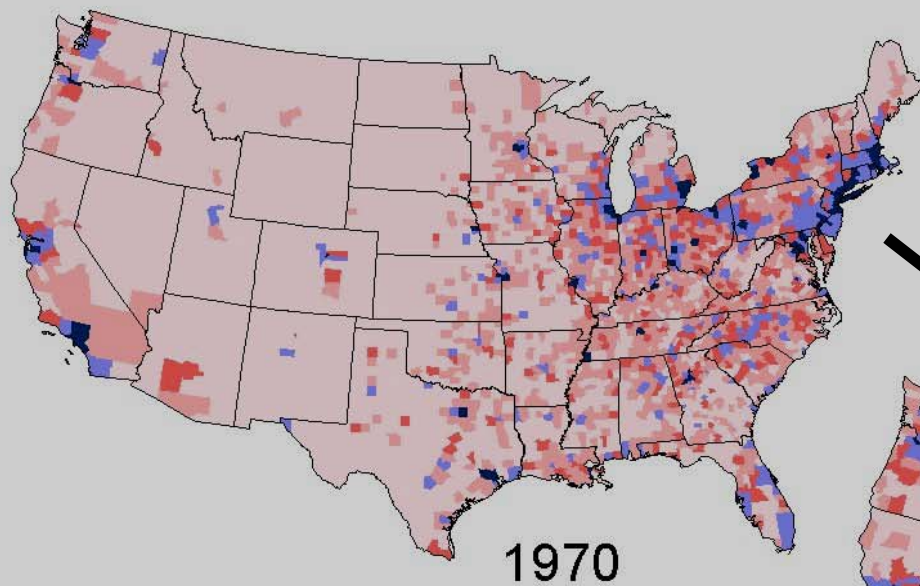
Description of Area	U.S. (n=4988)	North (n=2098)	South (n=1342)	Rocky Mtns. (n=932)	Pacific Coast (n=616)
	(Percent of Population)				
Established downtown area	9.2	9.7	8.6	8.6	9.6
Established older residential area near downtown	24.9	26.5	20.7	22.0	31.2
Established newer residential area	14.5	14.3	13.9	17.9	12.7
Newly developing area where building is active	9.9	7.6	11.8	11.5	11.0
New residential and preexisting rural house and farms	16.9	17.9	17.6	15.3	14.7
Rural area with little new development	21.1	20.0	24.1	21.4	18.3
Don't know	3.5	4.0	3.3	3.3	2.5
Total	100.0	100.0	100.0	100.0	100.00



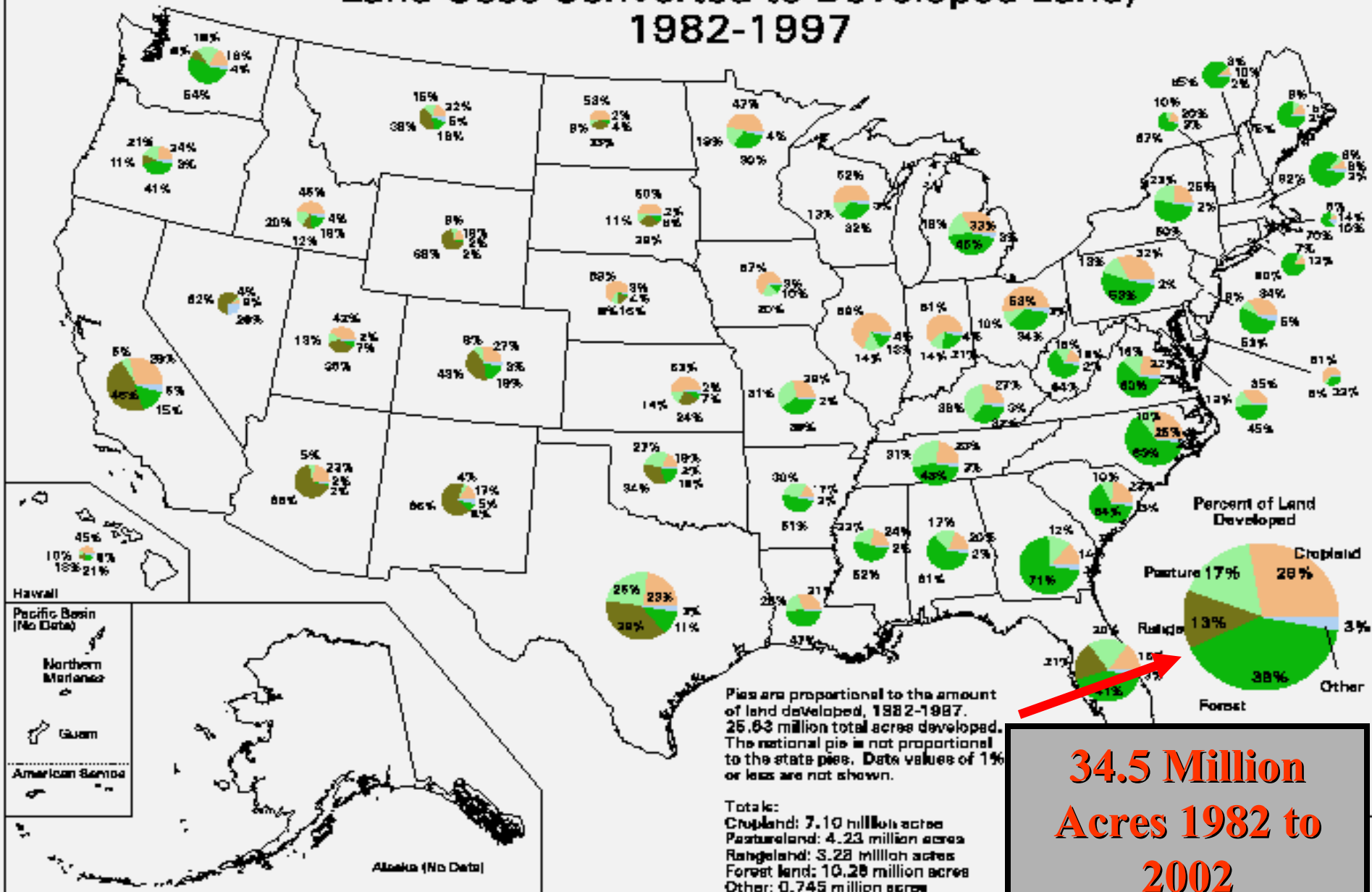
**Percentage Change in Metro Populations Inside and Outside  
of Central Cities: 1990 to 1998**



# Density of Occupied Housing Units

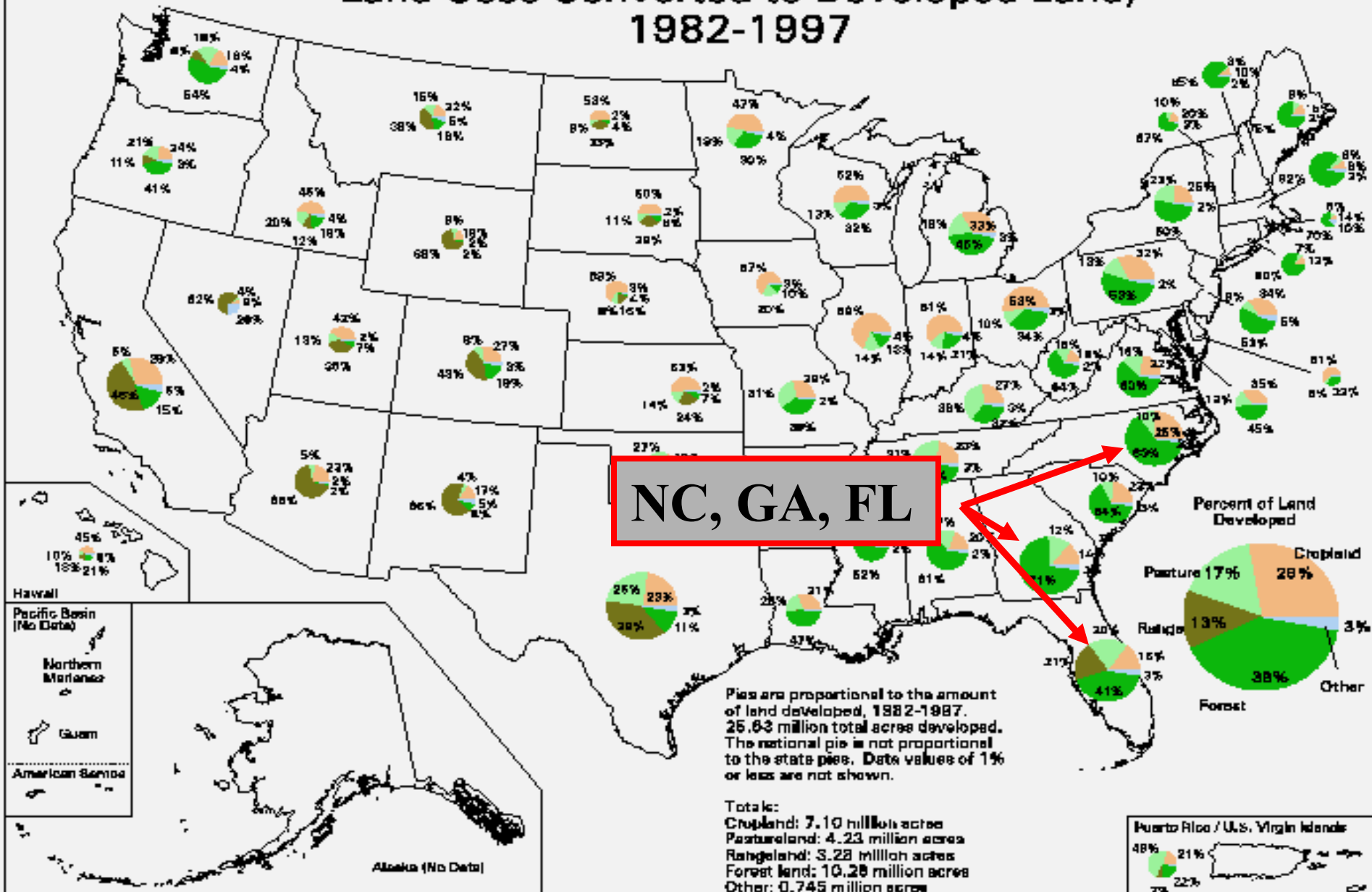


# Land Uses Converted to Developed Land, 1982-1997



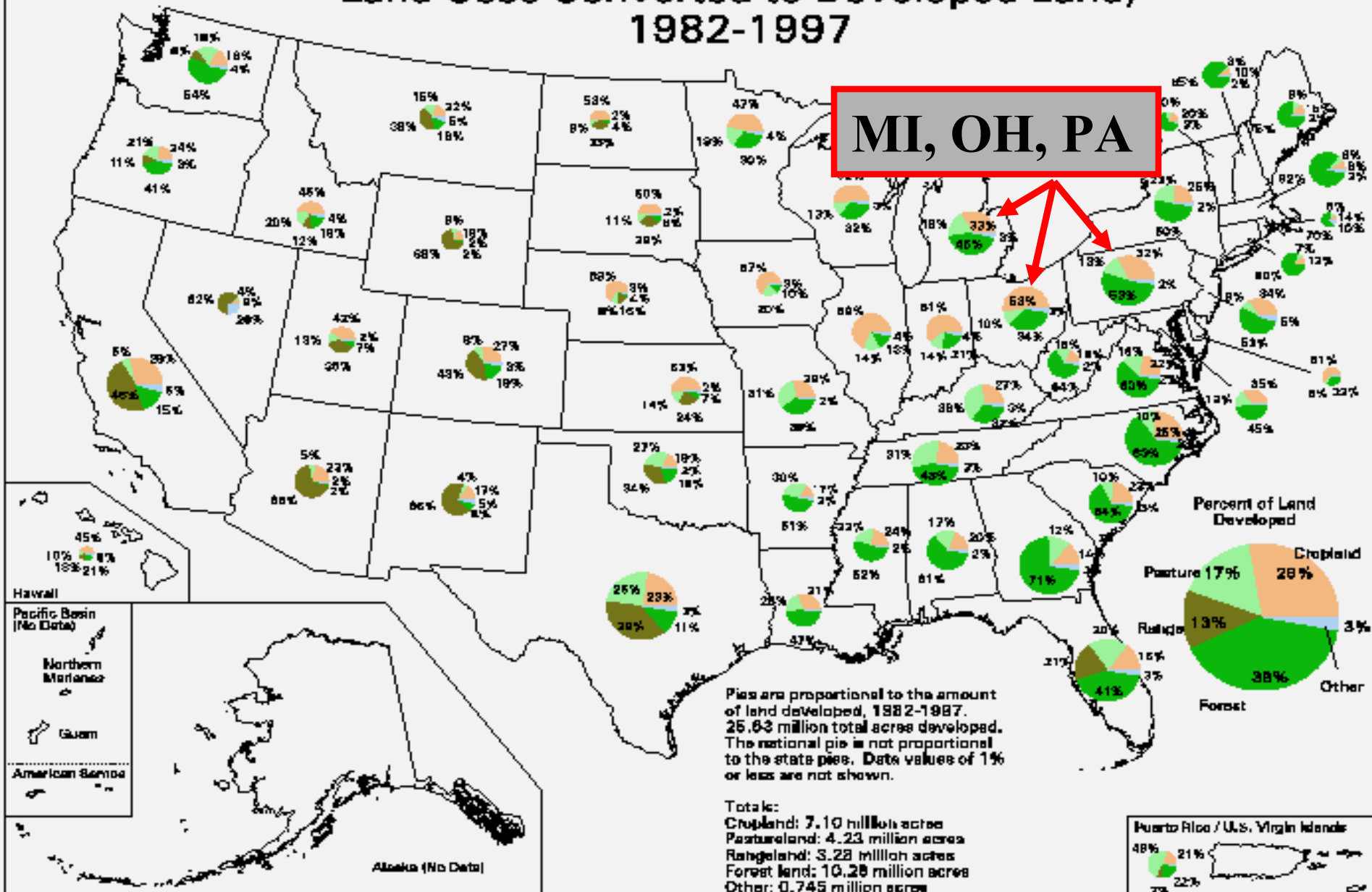
**34.5 Million  
Acres 1982 to  
2002**

# Land Uses Converted to Developed Land, 1982-1997

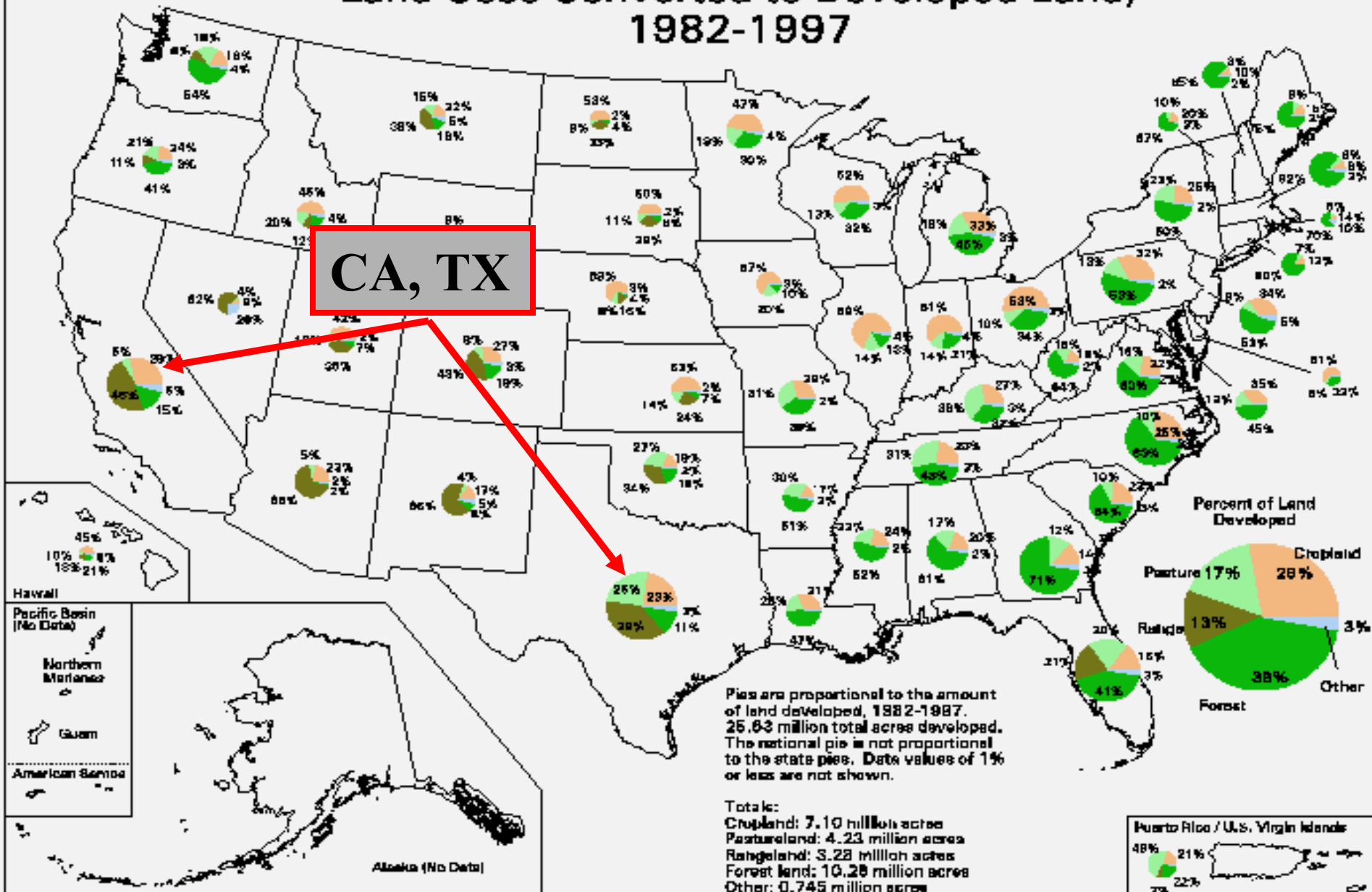




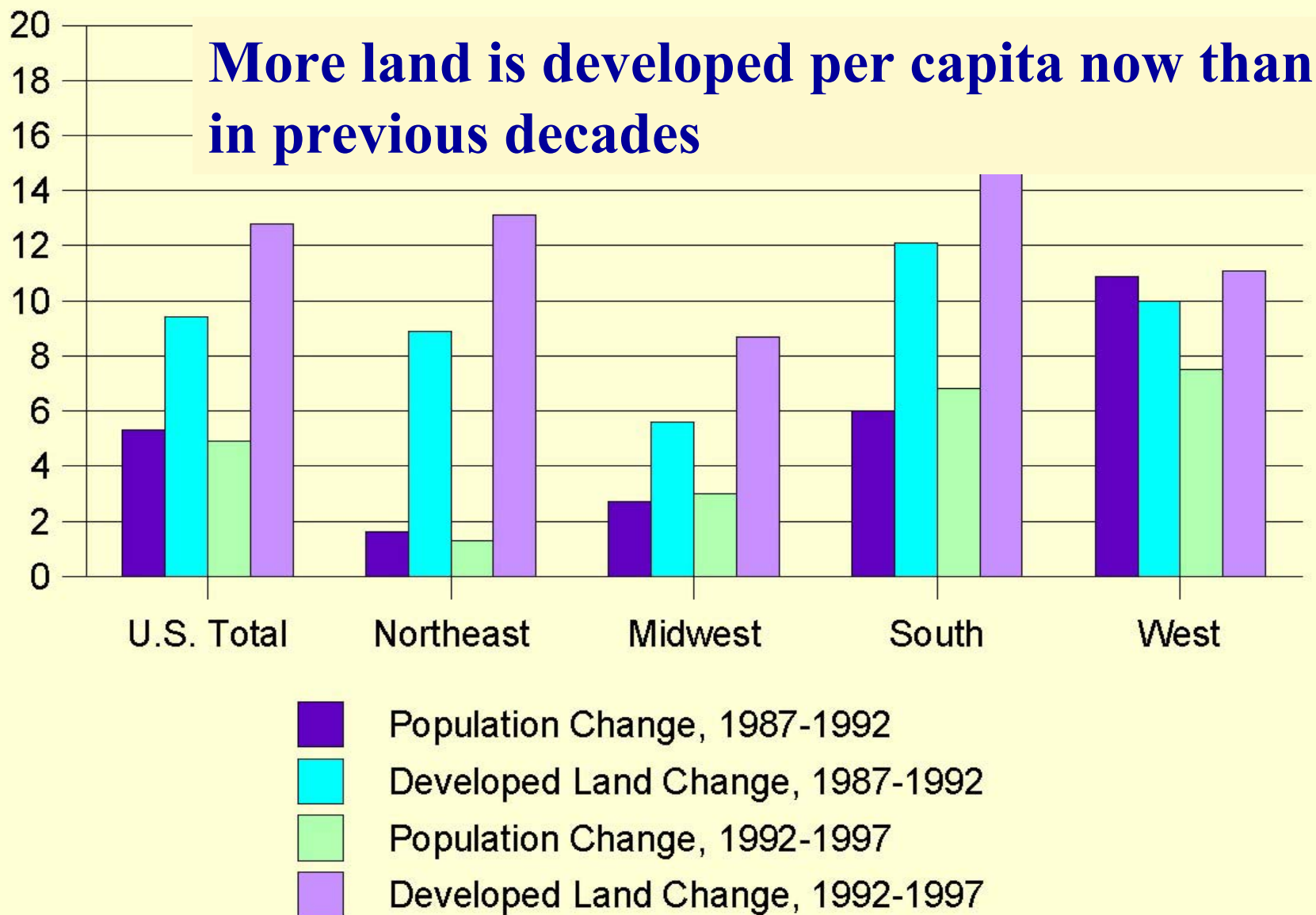
# Land Uses Converted to Developed Land, 1982-1997



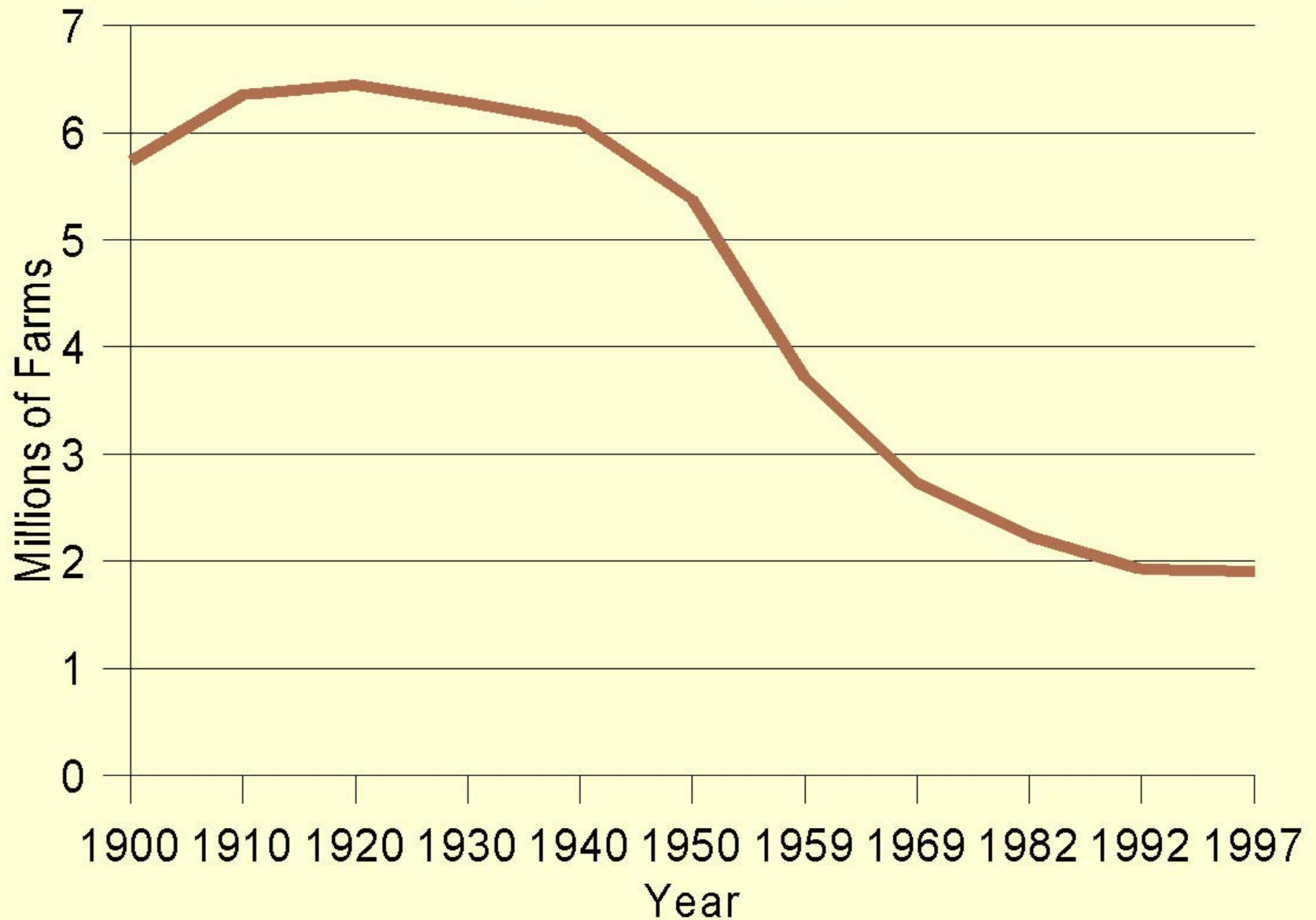
# Land Uses Converted to Developed Land, 1982-1997



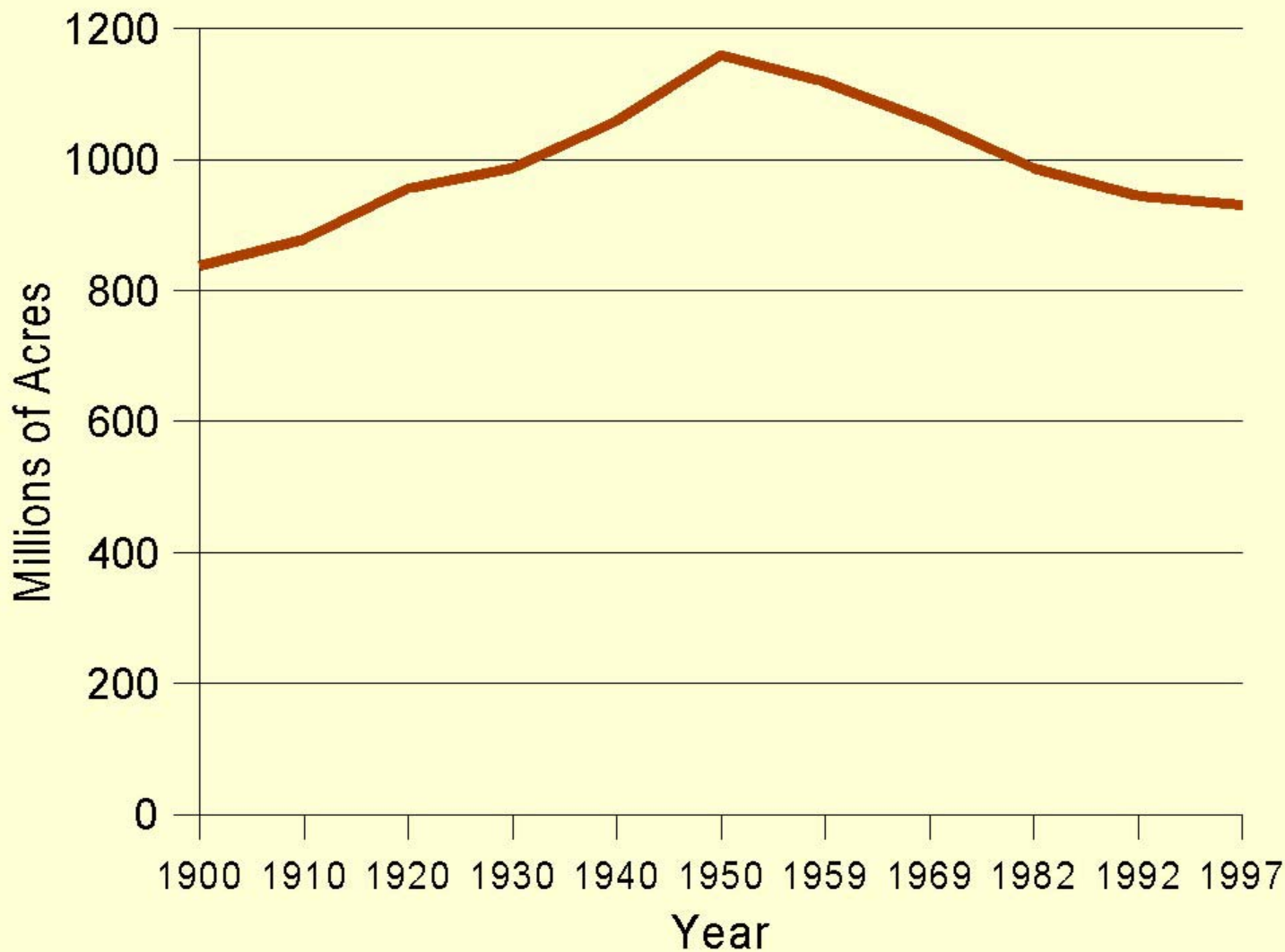
## ***Percentage change in population and developed land in the U.S. total and by region, 1987-1997***



## ***Number of farms in millions from 1900 to 1997***

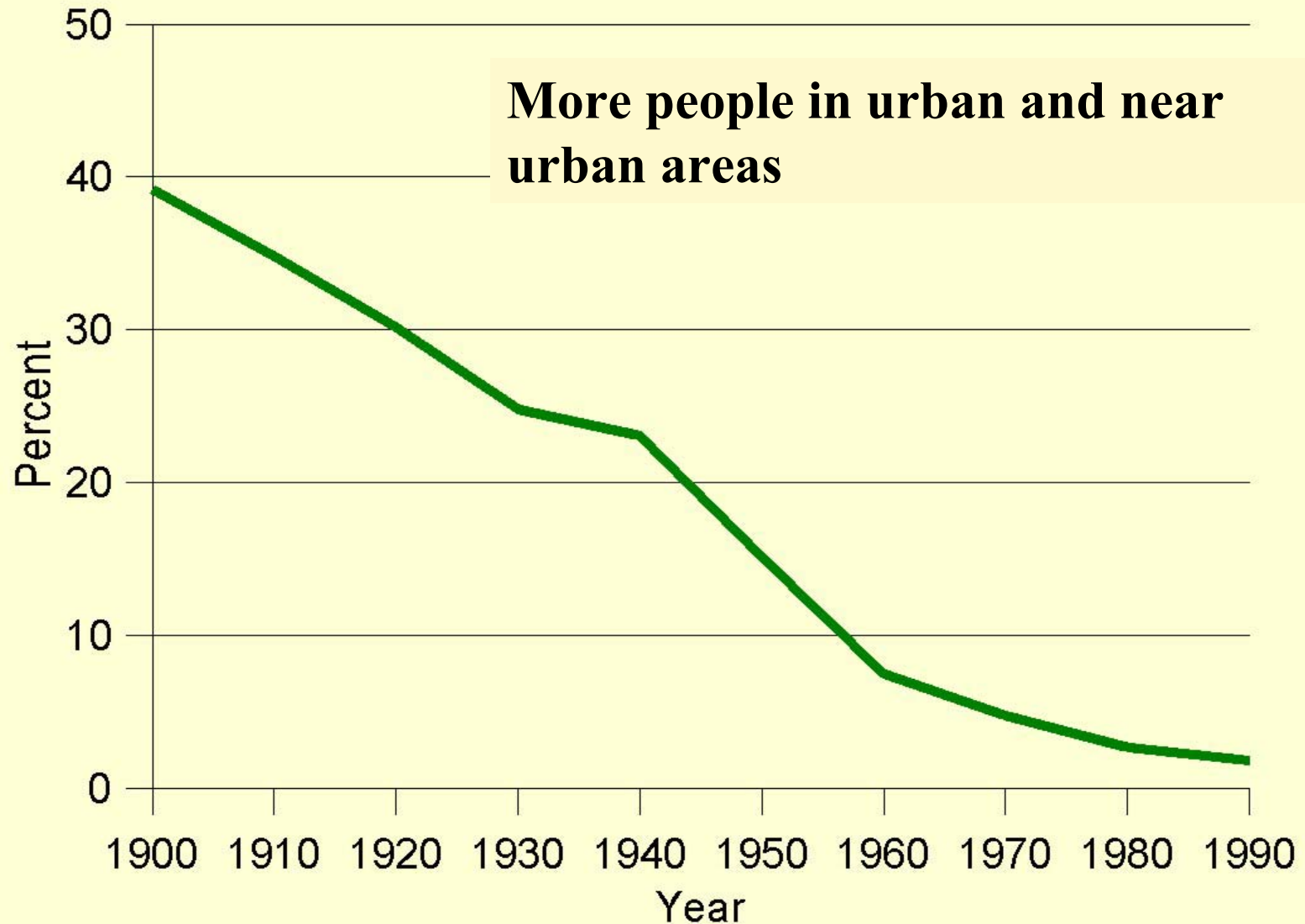


# ***Farm Acres in Millions of Acres from 1900 to 1997***

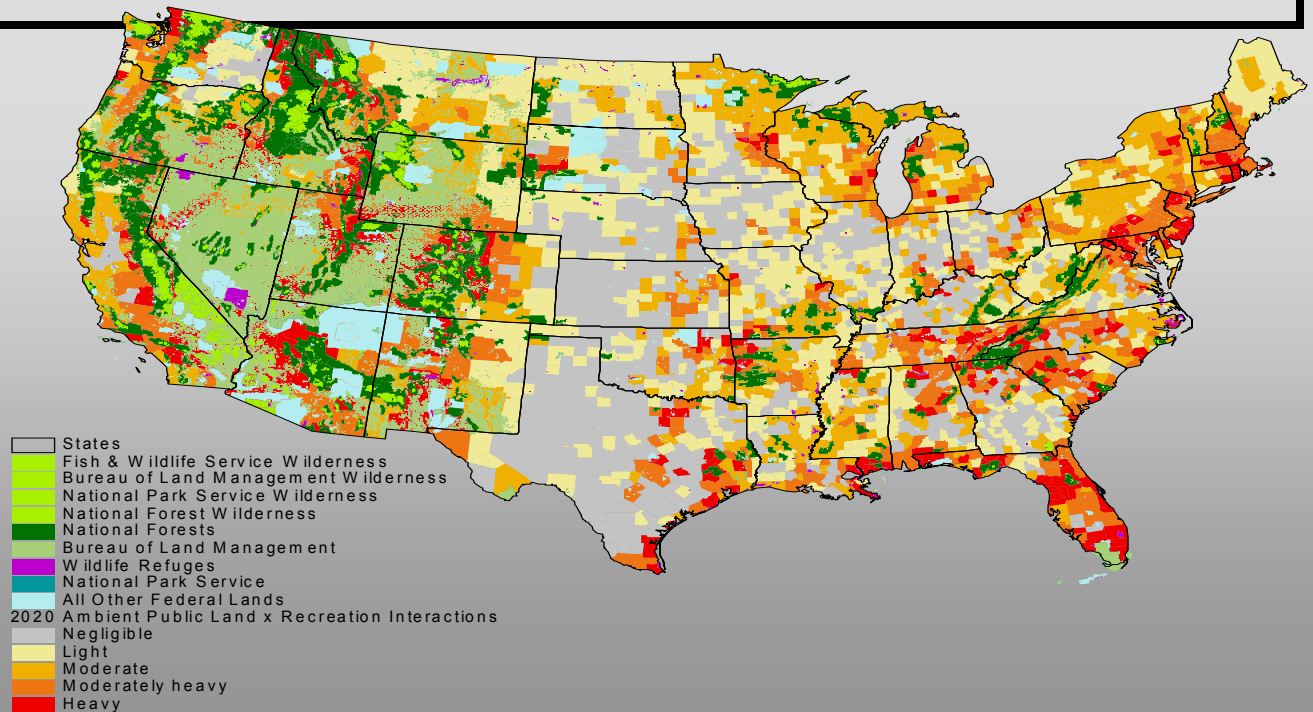


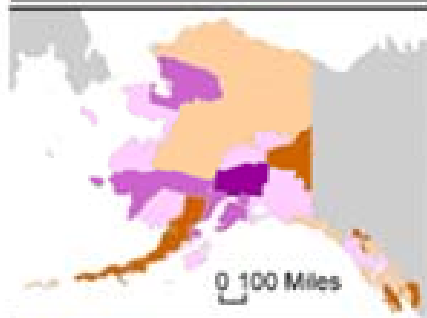


# ***Percent of U.S. population living on farms from 1900 to 1990***

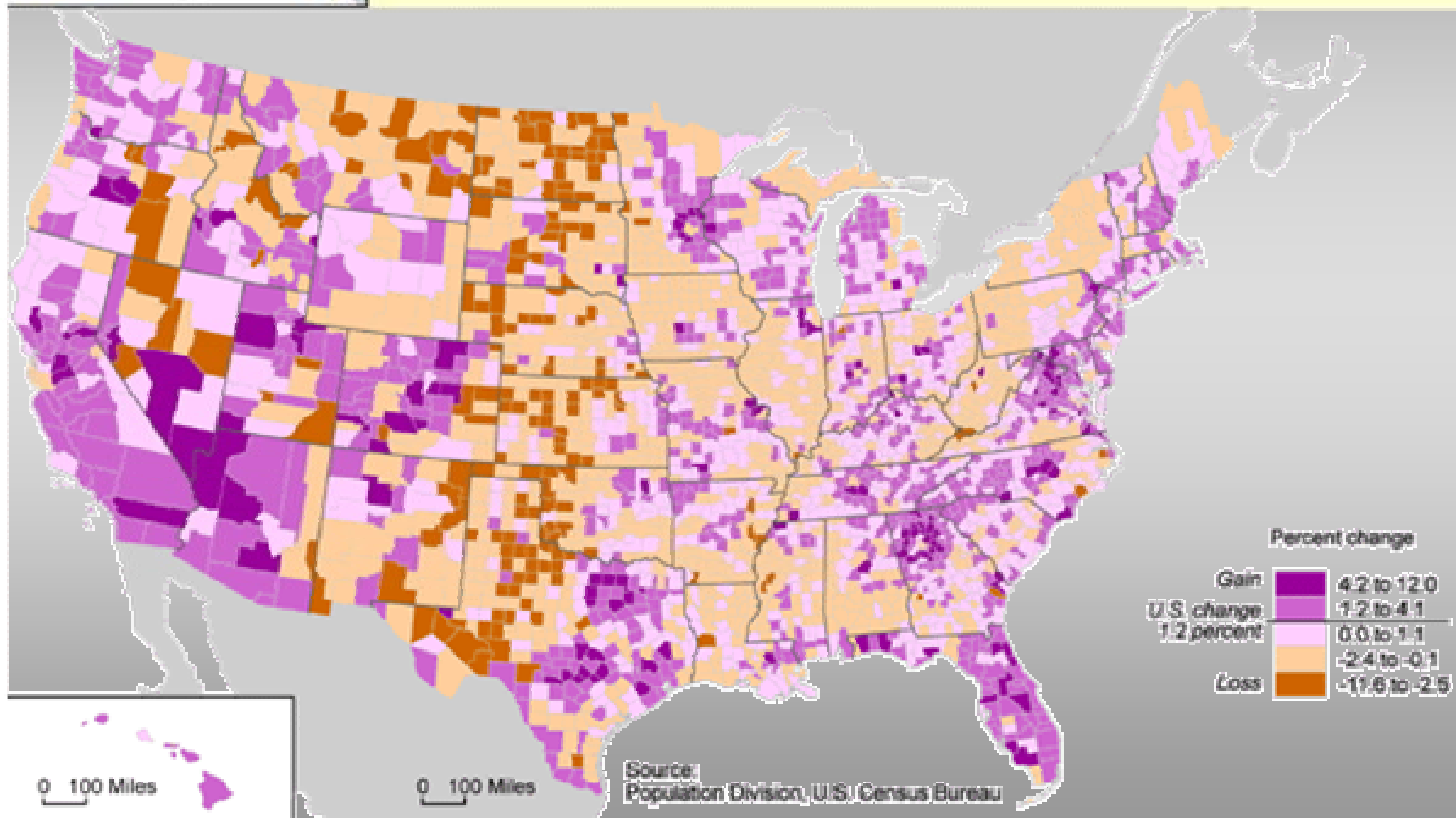


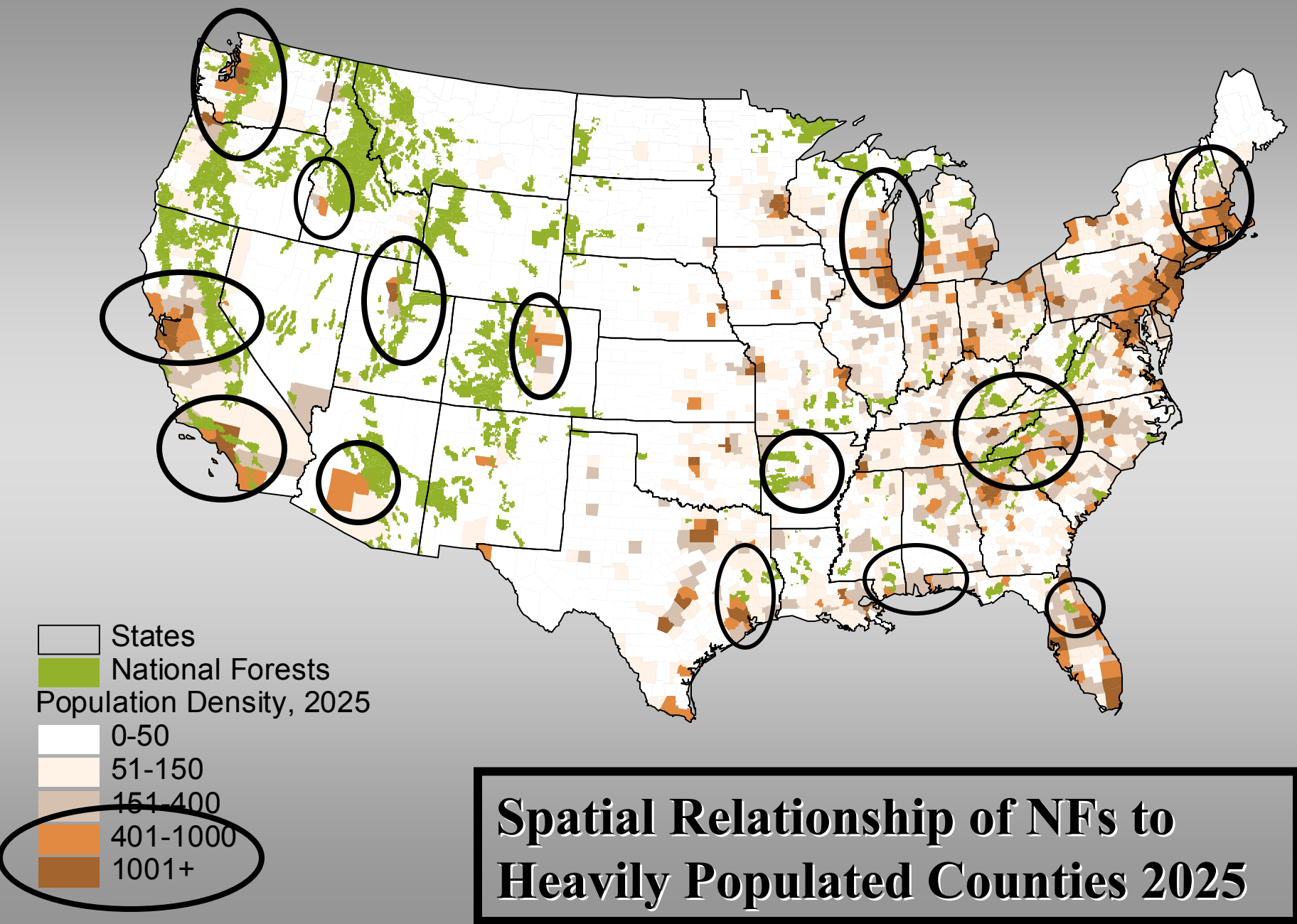
# Footprints Nearing Public Lands



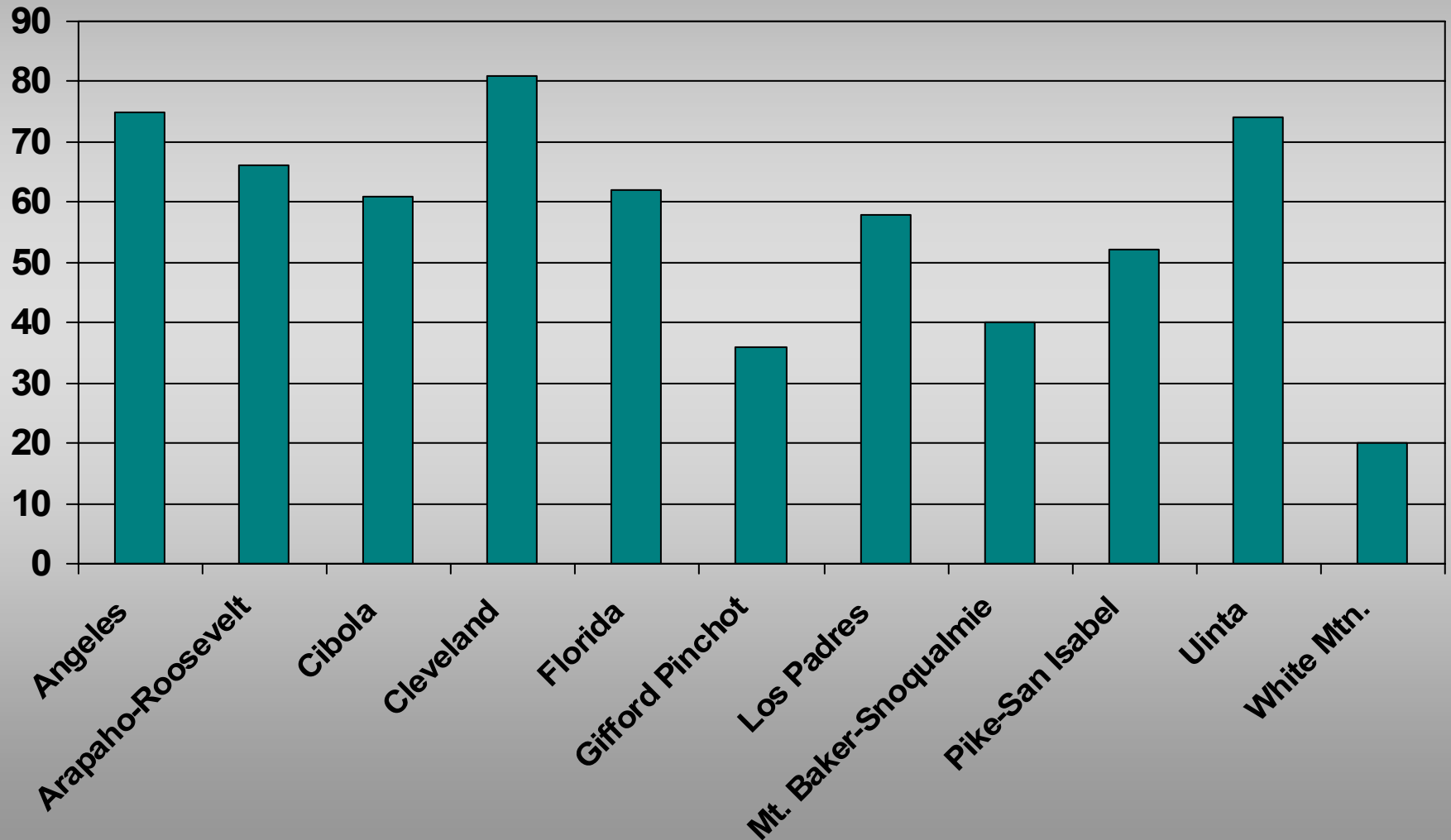


# Percent Change in Population by County April 1, 2000 to July 1, 2001



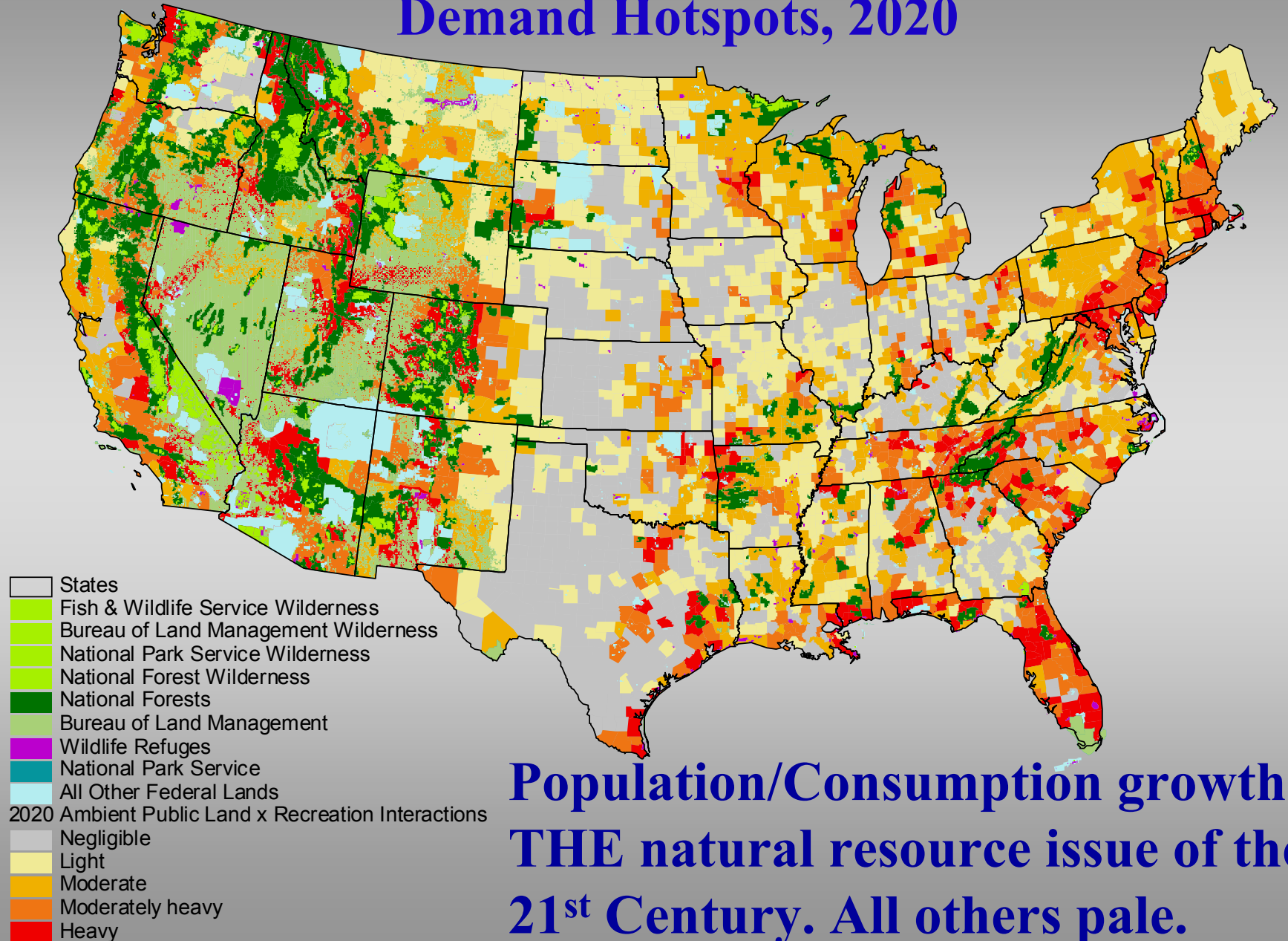


# Percent of UNF Visits by Persons Living Within 50 Miles of the Forest

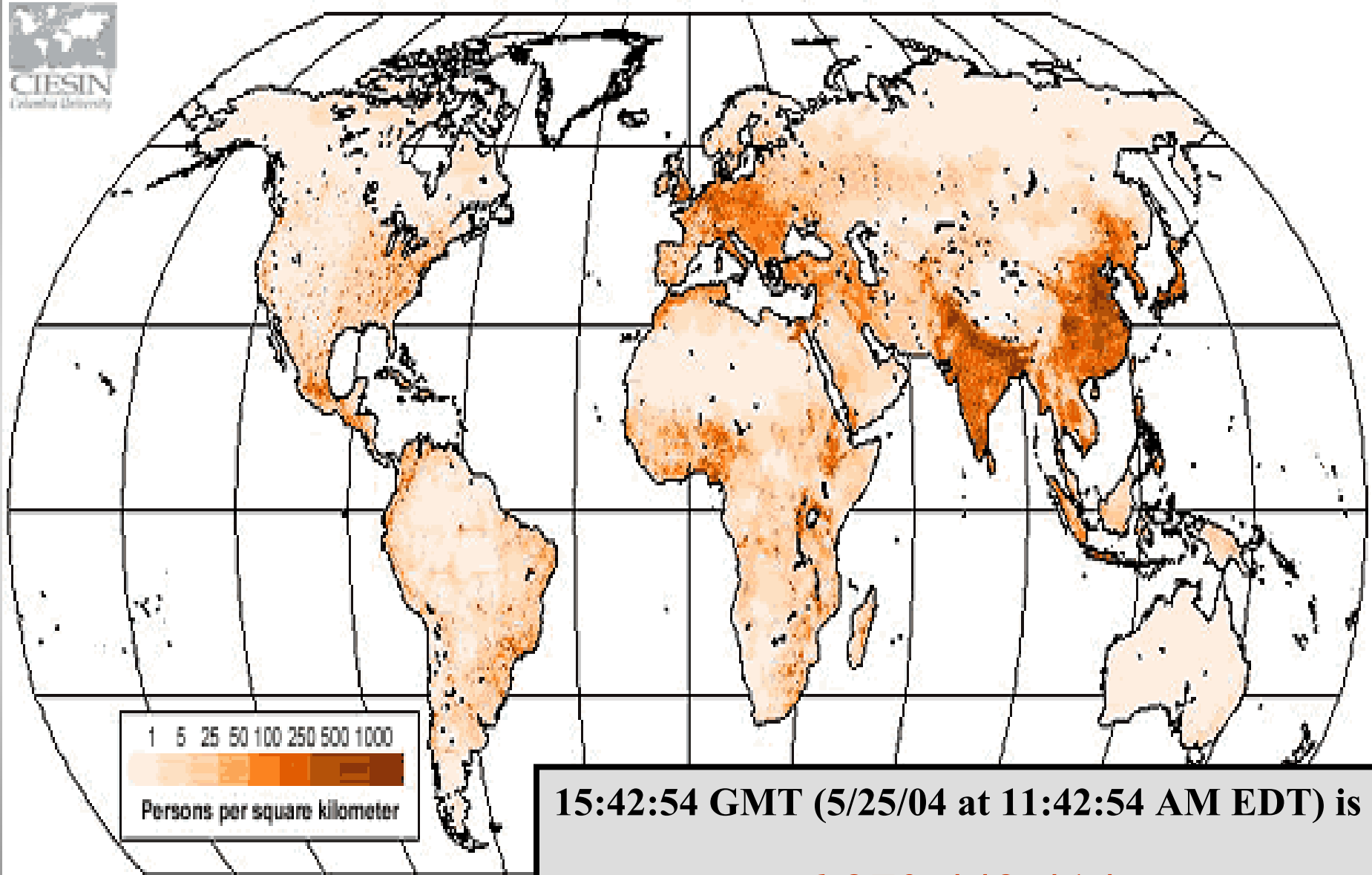




# Public Lands and NWPS Lands Overlaid onto Projected Demand Hotspots, 2020



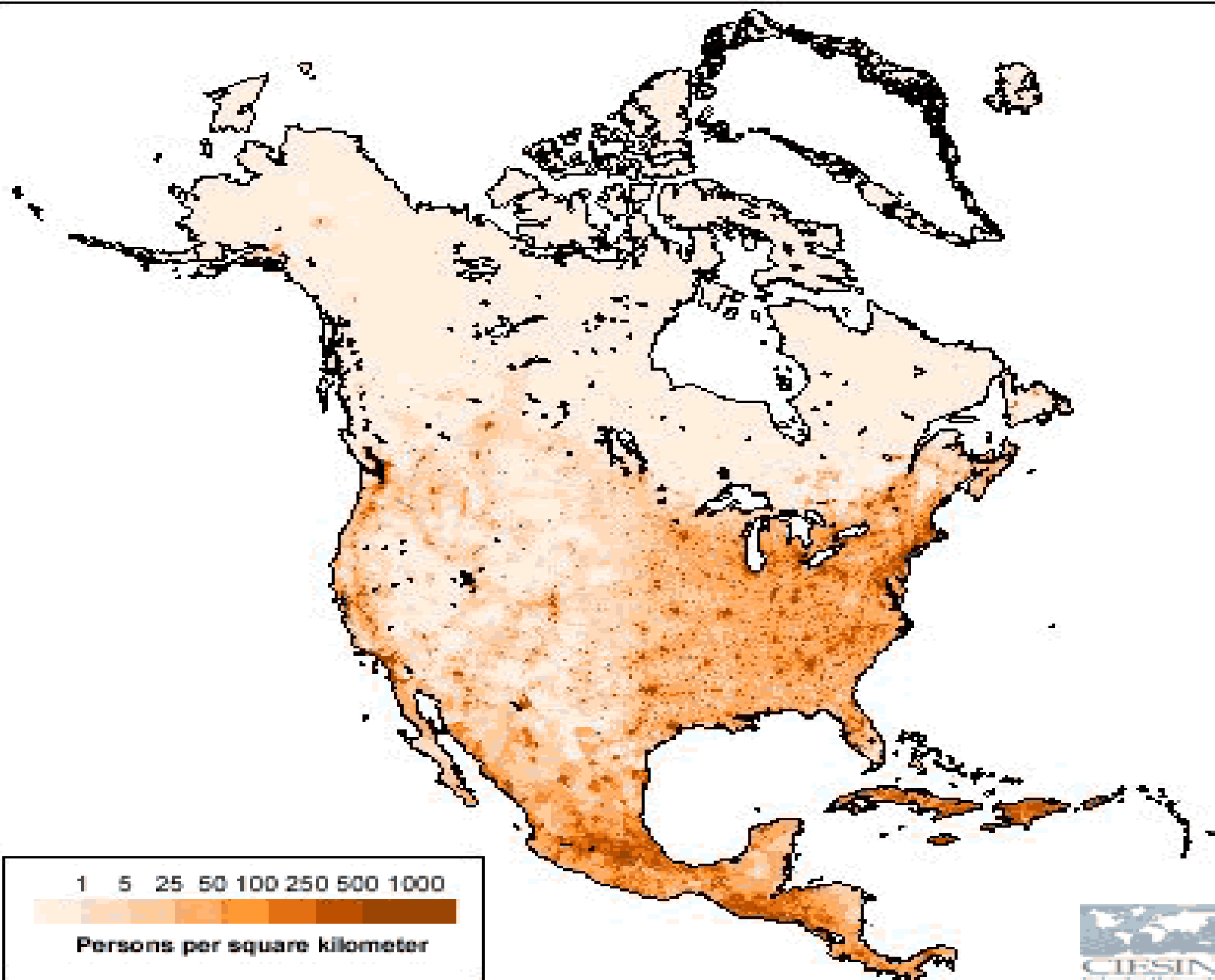
**Population/Consumption growth is  
THE natural resource issue of the  
21<sup>st</sup> Century. All others pale.**



15:42:54 GMT (5/25/04 at 11:42:54 AM EDT) is

**6,370,442,414**

**Growing Roughly 6 million per month**



# **Outdoor Recreation for 21st Century America**

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**A Report to the Nation:  
The National Survey on Recreation  
and the Environment**

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**H. Ken Cordell  
Principal Author**

Outdoor Recreation for 21st Century America

Cordell  
Principal Author



VENTURE

**Spring 2004**

# NSRE 2005

*NATIONAL SURVEY ON  
RECREATION AND THE  
ENVIRONMENT*

***SINCE 1960***

**THE UNITED STATES' ON-GOING  
NATIONAL RECREATION SURVEY**



# The Multiple Values of Wilderness

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**H. Ken Cordell**  
Principal Author

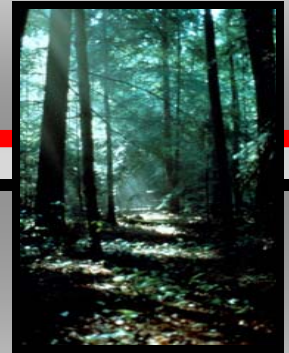
**The Multiple Values of Wilderness**

**Cordell**  
Principal Author



VENTURE

# Forces Shaping the Future of Public Natural Lands in the United States



- Immigration
- Population Growth
- Economic Change
- Food Security on the Land

Co-Authors:

Ken Cordell (FS)

(UGA)

Carter Betz (FS)

Gary Green (UGA)

[www.srs.fs.fed.us/trends](http://www.srs.fs.fed.us/trends)